

**ASRS Database Report Set**

**Inflight Weather Encounters**

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Report Set Description.....A sampling of reports from both air carrier flight crews  
and GA pilots referencing encounters with severe or  
unforecast weather.

Update Number .....35

Date of Update .....March 29, 2022

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

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



TH: 262-7

**MEMORANDUM FOR: Recipients of Aviation Safety Reporting System Data**

**SUBJECT: Data Derived from ASRS Reports**

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

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

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

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

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

A handwritten signature in blue ink, appearing to read "B. Hooey".

Becky L. Hooey, Director  
NASA Aviation Safety Reporting System

## CAVEAT REGARDING USE OF ASRS DATA

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

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

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

# Report Synopses

ACN: 1862012 *(1 of 50)*

### Synopsis

Center Controller reported an aircraft had a heater problem, aircraft was icing up, and could not hold altitude.

ACN: 1854944 *(2 of 50)*

### Synopsis

Air Carrier Pilot Crew reported an unstable approach in gusty wind conditions and continued to land. The flap load-relief system retracted the flaps from 30 to 25 when the gust front increased the aircraft's airspeed. After the landing the crew was informed via the data readout that the flaps stayed at 25 throughout the landing, although the crew had intended to extend them to 30.

ACN: 1854765 *(3 of 50)*

### Synopsis

Lancair Evolution pilot reported pitot static system icing in climb. The pilot diverted and landed without incident.

ACN: 1854231 *(4 of 50)*

### Synopsis

C172 instructor and student pilot reported poor aircraft performance shortly after takeoff led to the decision to land on the remaining runway. The aircraft ran off the runway after landing, resulting in minor injuries to the student pilot.

ACN: 1853268 *(5 of 50)*

### Synopsis

B737-700 Captain reported heavy rain on approach to landing and elected to make a go-around due to visibility issues. Reportedly, the hydrophobic coating on windscreens is ineffective.

ACN: 1853232 *(6 of 50)*

### Synopsis

Single Pilot reported loss of directional control during landing rollout resulting in a ground loop. A wheel pant was damaged due to tire air pressure leak.

ACN: 1851763 *(7 of 50)*

### Synopsis

B757-200 flight crew and a Dispatcher reported a Rudder Ratio EICAS Message on approach resulting in a go-around. Winds were out of limits for landing so the flight crew elected to divert a nearby suitable airport.

ACN: 1851649 *(8 of 50)*

### Synopsis

Air Carrier First Officer reported an altitude excursion from published altitude during approach in gusty wind conditions that also included a wake turbulence encounter. Pilot corrected back to published altitude and completed a safe landing without incident.

ACN: 1850775 *(9 of 50)*

### Synopsis

B737 MAX First Officer reported turbulence during descent caused aircraft to overspeed, requiring a reduction of airspeed. This caused the flight crew to request relief from an altitude restriction at a crossing point.

ACN: 1850756 *(10 of 50)*

### Synopsis

Air carrier flight crew reported they received a "too low flaps" warning on approach below 500 feet. The crew elected to not do a go-around and instead configured the flaps correctly and continued to a landing.

ACN: 1850535 *(11 of 50)*

### Synopsis

B747 Captain reported receiving a TCAS RA on an oceanic flight when his aircraft experienced altitude deviations due to turbulence, possibly wake-induced in RJJJ airspace.

ACN: 1849882 *(12 of 50)*

### Synopsis

B787 Relief First Officer reported the aircraft encountered severe turbulence in cruise flight, resulting in temporary loss of control and airspeed and altitude deviations.

ACN: 1849736 *(13 of 50)*

### Synopsis

C-150 pilot temporarily lost control of the aircraft due to windshear while maneuvering in a mountainous area as a cold front was approaching. An updraft caused the aircraft to climb past its service ceiling. The pilot eventually regained control and returned to departure airport.

ACN: 1846371 *(14 of 50)*

### Synopsis

ZTL Center Controller reported traffic flow management issues during weather conditions.

ACN: 1845978 *(15 of 50)*

### Synopsis

Captain reported a high workload led to the flight crew missing the restoration of engine bleeds, leading to a pressurization issue until it was recognized.

ACN: 1845822 *(16 of 50)*

### Synopsis

Two Jacksonville Center Controllers reported FAA Command Center would not comply with their request for traffic flow restrictions for known weather, causing operational challenges.

ACN: 1845774 *(17 of 50)*

### Synopsis

Air Tour pilot reported entering IMC on a VFR flight. Contacted ATC for vectors back to VFR conditions.

ACN: 1845466 *(18 of 50)*

### Synopsis

BE-35 pilot reported the engine quit after having selected the wrong fuel tank during scheduled fuel management procedure. The pilot decided to successfully divert and land at the nearest airport rather than troubleshoot in the air.

ACN: 1845166 *(19 of 50)*

### Synopsis

An Air Carrier pilot reported executing a go around due to encountering Wind Shear and receiving a Ground Proximity Warning. The flight diverted to a nearby airport.

ACN: 1844709 *(20 of 50)*

### Synopsis

A ZJX Center Controller reported insufficient ATC staffing and lack of sector flow management initiatives despite requests from Controllers resulting in sectors overloaded with traffic, frequency congestion, and Controllers refusing to take handoffs. The reporter was unable to concentrate and lost ability to perform required tasks. Other Controllers could not return to the work area after breaks due to undue stress.

ACN: 1844673 *(21 of 50)*

### Synopsis

ZMA ARTCC Controller reported an aircraft was caught in a microburst and eventually regained control of the aircraft after vectoring to another airport.

ACN: 1844438 *(22 of 50)*

### Synopsis

C560 Captain reported a right hand engine fire warning, causing an in flight shut down and an air turn back to a precautionary landing.

ACN: 1843128 *(23 of 50)*



## Synopsis

Flight Crew reported severe turbulence caused a temporary loss of aircraft control.

ACN: 1842805 *(24 of 50)*

## Synopsis

A pilot departing from a "900 foot gravel bar" reported a wind shear encounter forced the aircraft back down resulting in damage to the aircraft.

ACN: 1842294 *(25 of 50)*

## Synopsis

C172 flight instructor reported low flight over populated landmark due to low ceiling and to avoid a Class B airspace incursion. ATC requested pilot to correct.

ACN: 1841622 *(26 of 50)*

## Synopsis

A321 flight crew reported a horizontal windshear on takeoff roll. Flight crew recommended using a runway more aligned with wind conditions.

ACN: 1841505 *(27 of 50)*

## Synopsis

Captain reported an Air Turn Back caused by an EICAS message DOOR L EMER EXIT on climb out.

ACN: 1841181 *(28 of 50)*

## Synopsis

A Hot Air Balloon pilot reported unexpected wind currents forced the balloon to descend into a waterfall and river but they were able to regain control and climb away to a safe landing area.

ACN: 1840707 *(29 of 50)*

## Synopsis

A single engine Pilot reported they entered the wrong destination into their avionics resulting in turning the wrong direction and receiving a Low Altitude Alert from ATC. The reporter was diverting from their original clearance destination to refuel the aircraft.

ACN: 1840323 *(30 of 50)*

## Synopsis

Air Carrier flight crew reported a CFIT event due to a TCAS RA followed immediately by a wind shear warning during landing. Flight crew executed an evasive maneuver and sequenced for another approach.

ACN: 1840261 *(31 of 50)*

## Synopsis

C172 flight instructors reported during descent the flight attitude instruments gave conflicting information. The flight crew exited IMC conditions and performed a diversion in VMC conditions.

ACN: 1840140 *(32 of 50)*

## Synopsis

Pilot reported drifting left of course on approach and elected to fly a missed approach. Pilot further reported spotting a cell tower protruding thru the clouds and maneuvered to avoid it.

ACN: 1839640 *(33 of 50)*

## Synopsis

Pilot reported striking the water during low altitude flight caused by weather. After returning to the home airport, air frame damage was discovered.

ACN: 1839342 *(34 of 50)*

## Synopsis

Pilot reported becoming disoriented on approach due to fog and haze and descended below approach altitude. ATC provided assistance, requiring Pilot to make a 360 degree turn and climb to pattern altitude, subsequently landing safely.

ACN: 1839242 *(35 of 50)*

### Synopsis

Captain reported aft Flight Attendants were slow to take their seats during approach in turbulence, resulting in an injury to one Flight Attendant.

ACN: 1838504 *(36 of 50)*

### Synopsis

General aviation pilot departed airport VFR when when weather near the airport was marginal with low clouds in the area.

ACN: 1837918 *(37 of 50)*

### Synopsis

C510 pilot reported a temporary loss of aircraft control due to a severe turbulence/wind shear encounter during initial descent.

ACN: 1837907 *(38 of 50)*

### Synopsis

C172 pilot reported a runway excursion during a crosswind landing in order to avoid injury and property damage.

ACN: 1837579 *(39 of 50)*

### Synopsis

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

ACN: 1836824 *(40 of 50)*

### Synopsis

Instrument Rated Single Engine Pilot reported an unstable approach in IMC, resulting in a missed approach during which the pilot overflew two airliners on the adjoining taxiway.

ACN: 1836299 *(41 of 50)*

### Synopsis

A321 flight crew reported windshear, heavy rain, and severe turbulence on approach along with the loss of autopilot systems that resulted in multiple go-arounds before finally safely landing at the destination airport.

ACN: 1835463 *(42 of 50)*

### Synopsis

Single Engine pilot on an IFR flight plan encountered unforecasted weather containing a thunderstorm and severe turbulence. Maintaining airspeed, altitude and communication with ATC was difficult and an altitude deviation may have occurred.

ACN: 1835135 *(43 of 50)*

### Synopsis

Pilot reported a runway excursion caused by gusting winds.

ACN: 1834845 *(44 of 50)*

### Synopsis

B737 Captain reported encountering strong gusty winds during final approach and was able to land safely after recovering control.

ACN: 1834493 *(45 of 50)*

### Synopsis

MD-11 Second Officer reported encountering heavy precipitation in cruise flight when engine N2 began to roll back with a caution message, leading to no throttle movement.

ACN: 1831146 *(46 of 50)*

### Synopsis

First Officer reported the aircraft weather radar failed in heavy weather and the flight crew elected to divert to a precautionary landing.

ACN: 1829993 *(47 of 50)*

### Synopsis

Air carrier Captain reported filing reroute to avoid weather, but TMU issued a reroute resulting in an unsafe flight into weather.

ACN: 1829622 *(48 of 50)*

### Synopsis

Flight crew reported a loss of aircraft control in severe turbulence.

ACN: 1828895 *(49 of 50)*

### Synopsis

B737-800 flight crew reported unreliable airspeed and altimeter in IMC conditions. Systems returned to normal after exiting IMC.

ACN: 1828079 *(50 of 50)*

### Synopsis

Corporate aircraft pilot reported flying VFR and entering IMC over mountainous terrain resulting in GPWS alert and evasive action taken in order to return to VFR flight.

# **Report Narratives**

## Time / Day

Date : 202111

Local Time Of Day : 1201-1800

## Place

Locale Reference.ATC Facility : ZBW.ARTCC

State Reference : NH

Altitude.MSL.Single Value : 8000

## Aircraft

Reference : X

ATC / Advisory.Center : ZBW

Make Model Name : Small Aircraft, Low Wing, 2 Eng, Retractable Gear

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Flight Plan : IFR

Flight Phase : Cruise

Airspace.Class E : ZBW

## Component

Aircraft Component : Aircraft Heating System

Aircraft Reference : X

Problem : Malfunctioning

Problem : Failed

## Person

Location Of Person.Facility : ZBW.ARTCC

Reporter Organization : Government

Function.Air Traffic Control : Enroute

Qualification.Air Traffic Control : Fully Certified

Experience.Air Traffic Control.Time Certified In Pos 1 (yrs) : 6

ASRS Report Number.Accession Number : 1862012

Human Factors : Time Pressure

## Events

Anomaly.Aircraft Equipment Problem : Less Severe

Anomaly.ATC Issue : All Types

Anomaly.Deviation - Altitude : Excursion From Assigned Altitude

Anomaly.Deviation - Track / Heading : All Types

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

Anomaly.Deviation / Discrepancy - Procedural : Clearance

Anomaly.Ground Event / Encounter : Ground Equipment Issue

Anomaly.Inflight Event / Encounter : Weather / Turbulence

Anomaly.Inflight Event / Encounter : CFTT / CFIT

Detector.Person : Air Traffic Control

Detector.Person : Flight Crew

When Detected : In-flight

Result.Flight Crew : Overcame Equipment Problem

Result.Air Traffic Control : Issued New Clearance

Result.Air Traffic Control : Issued Advisory / Alert

Result.Air Traffic Control : Provided Assistance

## Assessments

Contributing Factors / Situations : Aircraft

Contributing Factors / Situations : Weather

Primary Problem : Weather

## Narrative: 1

Training on Sector X when the CIC told me there was an emergency at [Sector Y] and my pilot skills might be needed. I immediately terminated training and proceeded to Sector Y, where I plugged in with the Radar Controller and offered to assist. The previous sector had coordinated a malfunctioning heater. However, it was quickly apparent that we had a small aircraft that was icing up, at MIA, and could not hold altitude. Over the next 45 minutes, the Radar Controller, CIC, OM, Radar Associate, CWSU meteorologist, and myself worked the aircraft north and west toward lower MIA's and better weather. On several occasions the aircraft entered turns and descents without instruction to do so, and each time the Radar Controller provided simple, pertinent instructions that helped the pilot regain/maintain control of the aircraft. Another Controller team came back and took the airspace and other frequencies, so our team could concentrate solely on assisting the emergency aircraft. The aircraft was below MIA the entire time, and with no obstructions depicted I obtained a sectional chart and spent most of the emergency tracking the aircraft on the chart and calling out obstructions to the Radar Controller, who relayed that information to the pilot. Eventually the aircraft dropped out of communication and radar coverage, so we placed another aircraft on the frequency to act as a relay. Wheeler-Sack Airbase also called several times with position updates, as their radar could see him while ours could not. Eventually we were able to get confirmation that the aircraft had safely landed. We only then discovered that the aircraft was a small aircraft [type X], not a small aircraft [type Y] as the flight plan indicated. This incident happened because the aircraft flew into icing conditions. Our job was made significantly more difficult by the lack of depicted obstructions on our video maps. An Emergency Obstruction Video Map needs to be created for the facility.

## Synopsis

Center Controller reported an aircraft had a heater problem, aircraft was icing up, and could not hold altitude.



## Time / Day

Date : 202111

Local Time Of Day : 0601-1200

## Place

Locale Reference.ATC Facility : ZZZ.Tower

State Reference : US

Altitude.AGL.Single Value : 400

## Environment

Flight Conditions : VMC

## Aircraft

Reference : X

ATC / Advisory.Tower : ZZZ

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

Nav In Use : GPS

Nav In Use : FMS Or FMC

Nav In Use.Localizer/Glideslope/ILS : ILS XYR

Flight Phase : Final Approach

Flight Phase : Landing

Airspace.Class B : ZZZ

## Component

Aircraft Component : Trailing Edge Flap

Aircraft Reference : X

Problem : Malfunctioning

## Person : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Pilot Flying

Function.Flight Crew : First Officer

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Experience.Flight Crew.Last 90 Days : 184

Experience.Flight Crew.Type : 3985

ASRS Report Number.Accession Number : 1854944

Human Factors : Workload

Human Factors : Time Pressure

Human Factors : Distraction

Human Factors : Situational Awareness

## Person : 2

Location Of Person.Aircraft : X  
Location In Aircraft : Flight Deck  
Reporter Organization : Air Carrier  
Function.Flight Crew : Captain  
Function.Flight Crew : Pilot Not Flying  
Qualification.Flight Crew : Multiengine  
Qualification.Flight Crew : Instrument  
Qualification.Flight Crew : Air Transport Pilot (ATP)  
Experience.Flight Crew.Last 90 Days : 199  
Experience.Flight Crew.Type : 3946  
ASRS Report Number.Accession Number : 1854923  
Human Factors : Time Pressure  
Human Factors : Situational Awareness  
Human Factors : Distraction  
Human Factors : Workload

## Events

Anomaly.Aircraft Equipment Problem : Less Severe  
Anomaly.Deviation - Speed : All Types  
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy  
Anomaly.Inflight Event / Encounter : Unstabilized Approach  
Anomaly.Inflight Event / Encounter : Weather / Turbulence  
Anomaly.Inflight Event / Encounter : CFTT / CFIT  
Detector.Person : Flight Crew  
Were Passengers Involved In Event : N  
When Detected : In-flight  
Result.General : None Reported / Taken

## Assessments

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

## Narrative: 1

I was flying the ILS XYR approach into ZZZ. The Captain was the Pilot Monitoring. We had monitored and discussed the weather before initial descent. We knew from ATC reports that aircraft were having difficulty landing. Winds were 180/27 gusting to 40 KTS, with good visibility and 4900 ft. ceiling. ATIS also reported gains and losses of 15 KTS on final approach. We planned and briefed a flaps 30 approach with the maximum 15 KTS additive, we spent time discussing the winds and a potential missed approach. Final approach speed was 144 with a target of 159 KTS. Prior to the final approach fix, the wind was fairly steady at 35-45 KTS, with no more than light turbulence. We were instructed to maintain 170 KTS until the FAF. We extended the gear and flaps on schedule and maintained stabilized approach criteria. Airspeed control was manageable with no significant transients. Prior to passing 500 ft., we encountered a short 10 KTS loss that was countered with power, at that time auto throttles were engaged. The airspeed dropped to 150 KTS before returning to 160. I clicked off the auto throttles below 500 ft. Soon after we had a gain to approx. 175 KTS that persisted. I delayed a power reduction in anticipation of the gust. The speed started dropping back, but stayed near 170. I continued the approach focused on maintaining glide slope and center line. The Captain

made two airspeed calls below 500 ft. I was trying to work it back on speed but was concerned about maintaining glide slope with the steep drop off at the approach end of Runway XYR and the expected altitude loss in close. I transitioned and we got a "Terrain" call out. The Captain said continue. I landed the aircraft in the touchdown zone and deceleration was normal. The Captain took control of the aircraft at approximately 80 KTS and cleared the runway. I checked the approach report and flaps at touchdown said 24. The landing was made unintentionally in a non-planned configuration. We taxied in normally and discussed the approach after shutting down at the gate.

## Narrative: 2

First Officer was Pilot Flying, I was Pilot Monitoring. We had monitored and discussed the ZZZ weather extensively before initial descent. Winds were 180/27 gusting to 40 KTS, with good visibility and 4900 ft. ceiling. ATIS also reported gains and losses of 15 KTS on final approach. We planned and briefed a flaps 30 approach with the maximum 15 KTS additive, paying special attention to the winds and possibility of flap relief blow-up and a missed approach. Final approach speed was 144 with a target of 159 KTS. Prior to the final approach fix, the wind was fairly steady at 35-45 KTS, with no more than light turbulence. After starting down the glide path in final configuration, we encountered first a short 10 KTS loss that was countered with power. I saw airspeed drop to 150 before returning to 160. Soon after we had a gain to approx. 175 KTS that persisted. I looked at the flap gauge and saw the flaps reset to 25. Soon after that, the speed started dropping back, but stayed near 170. I expected the flaps to return to 30, and divided my attention between that, the runway and the airspeed. Aside from a few bumps and the gusts, there were no significant deviations from the glide path. At this point we were at approximately 100 ft. over the threshold and I judged the approach to be safe. The First Officer landed the aircraft easily in the touchdown zone and deceleration was normal. I took control of the aircraft at approximately 80 KTS and cleared the runway. I then checked the flap indicator and it was still at 25. I had assumed the flaps had extended to 30, but the landing was made unintentionally in a non-planned configuration. We taxied in normally and discussed the approach after shutting down at the gate.

## Synopsis

Air Carrier Pilot Crew reported an unstable approach in gusty wind conditions and continued to land. The flap load-relief system retracted the flaps from 30 to 25 when the gust front increased the aircraft's airspeed. After the landing the crew was informed via the data readout that the flaps stayed at 25 throughout the landing, although the crew had intended to extend them to 30.

## Time / Day

Date : 202111

Local Time Of Day : 1801-2400

## Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Relative Position.Distance.Nautical Miles : 15

Altitude.MSL.Single Value : 24000

## Environment

Flight Conditions : VMC

Light : Daylight

## Aircraft

Reference : X

Aircraft Operator : Personal

Make Model Name : Lancair Evolution

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Personal

Flight Phase : Climb

Route In Use : Direct

Route In Use.Airway : DAG

## Component

Aircraft Component : Pitot-Static System

Aircraft Reference : X

Problem : Malfunctioning

## Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Personal

Function.Flight Crew : Single Pilot

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Private

Qualification.Flight Crew : Instrument

Experience.Flight Crew.Total : 720

Experience.Flight Crew.Last 90 Days : 111

Experience.Flight Crew.Type : 55

ASRS Report Number.Accession Number : 1854765

Human Factors : Human-Machine Interface

Human Factors : Situational Awareness

Human Factors : Troubleshooting

Human Factors : Confusion

## Events

Anomaly.Aircraft Equipment Problem : Critical  
Anomaly.Deviation - Speed : All Types  
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy  
Anomaly.Deviation / Discrepancy - Procedural : Clearance  
Anomaly.Inflight Event / Encounter : Weather / Turbulence  
Detector.Person : Flight Crew  
When Detected : In-flight  
Result.Flight Crew : Requested ATC Assistance / Clarification  
Result.Flight Crew : Landed As Precaution  
Result.Flight Crew : Diverted  
Result.Aircraft : Equipment Problem Dissipated

## Assessments

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

## Narrative: 1

Flew my plane from ZZZ to ZZZ1 to have lunch and get the plane washed. After lunch and wash, preflighted plane, filed to fly to ZZZ2 at FL270 (Note: It was in the mid 90sF at ZZZ and the low 80s in ZZZ1). Departed ZZZ1 and activated autopilot. Conditions were clear and at FL180 I turned the pitot heat on per check list. I did note that when I turned the pitot heat on, OAT temps were already -10c and thought nothing further. As we approached FL240 the plane began to pitch up nose high and airspeed dropped to zero. I disconnected autopilot, hand flew the plane and began to trouble shoot the issue. Since the pitot heat was on from FL180 to FL240 (2 mins?) I incorrectly assumed that the heat caused an issue. ATC cleared me for FL270 and my copilot correctly told them unable. We checked in with ATC and told them we lost airspeed and altitude indications. ATC said MODE C was reporting an altitude that we knew was what the airplane was showing but no longer correct. We knew we had a Pitot static issue but needed to determine why. My pilot/passenger correctly suggested that the appropriate action was to actually leave the pitot heat on and he was ultimately correct. We got a little airspeed indication on the instruments but was not enough to feel comfortable so co-pilot requested priority handling with ATC. We received vectors to an arrival procedure back to ZZZ. After about 5 mins all instruments returned to normal and we cancelled the priority handling. I landed without incident. ZZZ Airport Fire and Operations met us at my parking space to make sure we were OK. We suspect that the cause of the incident was water in the pitot tube from getting the plane washed at ZZZ1 exacerbated by me not turning on the pitot heat before the water in the pitot tube froze. Consider always flying with pitot heat on. Make OAT a more regular part of my scan

## Synopsis

Lancair Evolution pilot reported pitot static system icing in climb. The pilot diverted and landed without incident.

## Time / Day

Date : 202111

Local Time Of Day : 1201-1800

## Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.AGL.Single Value : 0

## Environment

Flight Conditions : VMC

Weather Elements / Visibility : Windshear

Weather Elements / Visibility.Visibility : 10

Light : Daylight

Ceiling.Single Value : 12000

## Aircraft

Reference : X

ATC / Advisory.CTAF : ZZZ

Aircraft Operator : FBO

Make Model Name : Skyhawk 172/Cutlass 172

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 91

Flight Plan : None

Mission : Training

Flight Phase : Takeoff / Launch

Route In Use : None

Airspace.Class G : ZZZ

## Person : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : FBO

Function.Flight Crew : Instructor

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Flight Instructor

Qualification.Flight Crew : Commercial

Experience.Flight Crew.Total : 526

Experience.Flight Crew.Last 90 Days : 197

Experience.Flight Crew.Type : 139

ASRS Report Number.Accession Number : 1854231

Human Factors : Situational Awareness

## Person : 2

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : FBO

Function.Flight Crew : Trainee

Function.Flight Crew : Pilot Not Flying  
Qualification.Flight Crew : Student  
Experience.Flight Crew.Total : 51  
Experience.Flight Crew.Last 90 Days : 12  
Experience.Flight Crew.Type : 51  
ASRS Report Number.Accession Number : 1854233  
Human Factors : Training / Qualification

## Events

Anomaly.Deviation - Speed : All Types  
Anomaly.Ground Excursion : Runway  
Anomaly.Ground Event / Encounter : Loss Of Aircraft Control  
Anomaly.Inflight Event / Encounter : Weather / Turbulence  
Detector.Person : Flight Crew  
When Detected : In-flight  
Result.General : Physical Injury / Incapacitation  
Result.Flight Crew : Landed As Precaution

## Assessments

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

## Narrative: 1

Weather conditions on the morning of the flight were clear with gusty winds out of the south. Winds were forecasted to increase later in the day as a cold front approached the region. Student was intending to go to basic training next week. The goal was to complete a 1.4 hour flight so the student could be signed out for the student's private pilot check ride. The instructor began a conversation with [a staff member] who flew the airplane the previous night on a cross country. The [staff member] indicated that there were no issues with the airplane when they flew. The student and instructor discussed what the goal of the flight was. The student and instructor discussed the weather conditions and how much time needed to be flown. A discussion about forecasted wind shear and turbulence took place. AIRMET's for those conditions were noted. The instructor talked to the supervisor and provided a briefing on the goal of the flight. The supervisor briefed the instructor on the conditions that were experienced when coming into the airport within the last hour. Airspeed was +/-10 KTS., winds were out of the south at pattern altitude according to the PIREP provided by the supervisor. The student began the necessary checklists and started the engine. The student didn't notice any issues with the airplane during preflight. The fuel tanks were full at 40 gallons. The student and instructor briefed the flight once more and established roles. The instructor indicated he would be PIC for the takeoff and landing and controls would be given to the student after takeoff when appropriate. The instructor then began the taxi as the student completed the rest of the checklist items. The instructor stayed on the controls for the taxi until the airplane came to a stop for the run up. The run up was initiated by the student. As the run up and before takeoff checklist were completed, the student and instructor had another discussion about the wind speed and direction. The instructor directed the student to bug the wind direction and note the speed. The student bugged 180 degrees. Wind speed was 9 KTS., gusting 19 KTS., variable between 180 and 230 degrees. The instructor called back taxi on the CTAF and rolled out to the runway to use the full length of the runway for takeoff. The instructor then completed the 180 degree turn to depart. Takeoff power was applied and set. Static RPMs were above 2300 RPM and oil pressure was around 85-90 PSI. Airspeed came alive, and

rotation was initiated around 55 KTS. and main wheels were off at 60 KTS. Airspeed began to build as the airplane crabbed into the wind. No issues with the engine were noted. As the airplane was trying to accelerate to  $V_y$ , airspeed was not building at a normal rate. The airspeed could not accelerate past 70 KTS. The airplane climbed to about halfway up the height of the surrounding trees before the aborted takeoff was initiated. It appeared that the wind had shifted to a tailwind and the aircraft was not going to gain sufficient airspeed. [The rejected takeoff] was initiated about halfway down the runway. An attempt was made to land on the remaining runway. Airspeed was not decreasing sufficiently to descend back towards the runway. Ground effect was experienced, and the airplane began to float. At that point, the instructor realized they may not be able to land on the remaining pavement. Flaps 40deg were put in about 3/4 of the way down the runway to help increase drag. The instructor realized this would momentarily increase lift and cause the aircraft to balloon. But the goal was to get the airplane as slow as possible to help with the impact. The airplane contacted the ground and ballooned up before settling back down on the remaining runway pavement. The instructor tried to brake using the toe brakes and aerodynamic braking by pulling full aft on the yoke. The airplane departed the end of the runway pavement and began rolling in the grass. As it rolled, it slowed down to roughly 20 KTS. ground speed and came to a rest in a ditch. At that point, the engine was secured, and the student and instructor were okay. The instructor made a phone call to the supervisor who came to the scene. The student and instructor exited the airplane with no issue and waited for help. The student had one injury on the knee from hitting the primer on the left side of the panel. The instructor got a cut on the hand from the carburetor heat. No other injuries were reported. Contributing factors to the incident were the wind conditions. AIRMETs for wind shear and turbulence were active at the time of the flight, but the wind speed and direction were within limits of the aircraft. External pressure to complete the flight before a deadline contributed to the decision to go on the flight. Once power was applied and the airplane was airborne, the decision to abort the takeoff was initiated as soon as possible with the given indications. Other decisions once the aborted takeoff was initiated were done with careful consideration to reduce aircraft damage and personal harm.

## Narrative: 2

[Report narrative contained no additional information.]

## Synopsis

C172 instructor and student pilot reported poor aircraft performance shortly after takeoff led to the decision to land on the remaining runway. The aircraft ran off the runway after landing, resulting in minor injuries to the student pilot.



## Time / Day

Date : 202111

Local Time Of Day : 1201-1800

## Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.AGL.Single Value : 300

## Environment

Flight Conditions : IMC

Weather Elements / Visibility.Visibility : 1

Light : Daylight

Ceiling.Single Value : 300

## Aircraft

Reference : X

ATC / Advisory.Tower : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : B737-700

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Initial Approach

Route In Use : Vectors

Airspace.Class B : ZZZ

## Component

Aircraft Component : Cockpit Window

Aircraft Reference : X

Problem : Design

## Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Pilot Flying

Function.Flight Crew : Captain

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Instrument

Experience.Flight Crew.Last 90 Days : 230

Experience.Flight Crew.Type : 24000

ASRS Report Number.Accession Number : 1853268

Human Factors : Confusion

Human Factors : Situational Awareness

## Events

Anomaly.Aircraft Equipment Problem : Less Severe  
Anomaly.Inflight Event / Encounter : Weather / Turbulence  
Detector.Person : Flight Crew  
Were Passengers Involved In Event : N  
When Detected : In-flight  
Result.Flight Crew : Executed Go Around / Missed Approach  
Result.Flight Crew : Requested ATC Assistance / Clarification  
Result.Air Traffic Control : Provided Assistance

## Assessments

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

## Narrative: 1

Heavy rain at ZZZ, first leg with this aircraft so no knowledge how well the hydrophobic windshield coating or wipers worked. RNAV XXL to minimums. Poor rain shedding, even with wipers on high. Unable to see the runway environment at DA. Go-around and accomplished. CATII Runway XXR. Still heavy rain and runway environment now acquired until just above minimums. Runway difficult to see even between wiper swipes. Landed safely. FAA inspector on Jumpseat was not impressed with the visibility of the Boeing. Also, when ATC questioned the go-around, Controller asked if we were not on the Approach. Apparently other aircraft we're getting in using this procedure. They were not aware Company was not approved. Approach handed each aircraft over to Tower at the FAF, which was an extremely busy time to run checklist, remain established and hear what the previous aircraft was experiencing. Had it been necessary to go around this again I would have declared minimum fuel and possibly emergency fuel to get to a suitable airport without rain. Dispatch offered negligible help while we were in hold and no current radar reports of rain intensity.

## Synopsis

B737-700 Captain reported heavy rain on approach to landing and elected to make a go-around due to visibility issues. Reportedly, the hydrophobic coating on windscreens is ineffective.

## Time / Day

Date : 202111

Local Time Of Day : 0601-1200

## Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.MSL.Single Value : 2347

## Environment

Flight Conditions : VMC

Light : Daylight

## Aircraft

Reference : X

Aircraft Operator : Personal

Make Model Name : Piper Single Undifferentiated or Other Model

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Flight Plan : None

Mission : Personal

Flight Phase : Landing

## Component

Aircraft Component : Tires

Aircraft Reference : X

Problem : Malfunctioning

## Person

Location Of Person.Aircraft : X

Reporter Organization : Personal

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Commercial

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Instrument

Experience.Flight Crew.Total : 4021

Experience.Flight Crew.Last 90 Days : 30

Experience.Flight Crew.Type : 15

ASRS Report Number.Accession Number : 1853232

Human Factors : Situational Awareness

## Events

Anomaly.Aircraft Equipment Problem : Less Severe

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

Anomaly.Ground Event / Encounter : Loss Of Aircraft Control

Anomaly.Ground Event / Encounter : Ground Strike - Aircraft

Anomaly.Inflight Event / Encounter : Weather / Turbulence

Result.Flight Crew : Overcame Equipment Problem

Result.Aircraft : Aircraft Damaged

Result.Aircraft : Equipment Problem Dissipated

## Assessments

Contributing Factors / Situations : Aircraft

Contributing Factors / Situations : Human Factors

Contributing Factors / Situations : Weather

Primary Problem : Aircraft

## Narrative: 1

After landing, aircraft started [a] right [drift], then back to the left catching the wheel pant causing the wheel pant to wrap up underneath the right tire. It appeared the tire [air pressure] had leaked down during the flight. A ground loop resulted. Aircraft was on roll out and had slowed before the ground loop occurred. Wingtip scraped ground, did not cause any structural damage. Wheel pant was damaged, and rim was damaged. A quartering tailwind may have contributed. Wind sock on the approach end of the runway was showing no wind, but it was reported by a witness that the midfield wind sock showed a 10 knot quartering tailwind. Tower had reported winds light and variable.

## Synopsis

Single Pilot reported loss of directional control during landing rollout resulting in a ground loop. A wheel pant was damaged to due to tire air pressure leak.

## Time / Day

Date : 202110

Local Time Of Day : 1801-2400

## Place

Locale Reference.ATC Facility : ZZZZ.ARTCC

State Reference : FO

## Environment

Flight Conditions : VMC

Weather Elements / Visibility : Turbulence

Light : Night

## Aircraft

Reference : X

ATC / Advisory.Tower : ZZZZ

Aircraft Operator : Air Carrier

Make Model Name : B757-200

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Cargo / Freight / Delivery

Flight Phase : Initial Approach

Route In Use : Vectors

Airspace.Class B : ZZZZ

## Component

Aircraft Component : Rudder Control System

Aircraft Reference : X

Problem : Malfunctioning

## Person : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Pilot Not Flying

Function.Flight Crew : First Officer

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Instrument

ASRS Report Number.Accession Number : 1851763

## Person : 2

Location Of Person : Hangar / Base

Reporter Organization : Air Carrier

Function.Dispatch : Dispatcher

Qualification.Dispatch : Dispatcher

ASRS Report Number.Accession Number : 1851382

## Person : 3

Location Of Person.Aircraft : X  
Location In Aircraft : Flight Deck  
Reporter Organization : Air Carrier  
Function.Flight Crew : Captain  
Function.Flight Crew : Pilot Flying  
Qualification.Flight Crew : Air Transport Pilot (ATP)  
Qualification.Flight Crew : Instrument  
Qualification.Flight Crew : Multiengine  
ASRS Report Number.Accession Number : 1851768

## Events

Anomaly.Aircraft Equipment Problem : Critical  
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy  
Anomaly.Deviation / Discrepancy - Procedural : Clearance  
Anomaly.Inflight Event / Encounter : Weather / Turbulence  
Anomaly.Inflight Event / Encounter : Unstabilized Approach  
Detector.Automation : Aircraft Other Automation  
Detector.Person : Flight Crew  
Were Passengers Involved In Event : N  
When Detected : In-flight  
Result.General : Maintenance Action  
Result.General : Flight Cancelled / Delayed  
Result.Flight Crew : Diverted  
Result.Flight Crew : Requested ATC Assistance / Clarification  
Result.Flight Crew : Overcame Equipment Problem  
Result.Air Traffic Control : Provided Assistance

## Assessments

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

## Narrative: 1

Final approach to ZZZZ for a 22 knot crosswind landing. We got a Rudder Ratio Light and EICAS Message. Elected to go around knowing it would potentially restrict performance in particular to a cross wind landing. Ran the QRH, and it limited our winds to 15 knots crosswind landing so needed to divert. Selected ZZZZ1 due to its proximity and favorable winds and declared an emergency for our flight control malfunction. Landed at ZZZZ1 without further incident.

## Narrative: 2

On final at 160-170 knots, got Rudder Ratio EICAS. Hydraulic pressure was normal. Complied with QRH, and diverted due to wind limitations. Flight diverted to ZZZZ1. Priority handling was requested by crew.

## Narrative: 3

On final for ILS XX ZZZZ, got a Rudder Ratio EICAS. Executed a go-around, complied with QRH, limited to 15 knots cross wind. ZZZZ winds were 200/23G33. ZZZZ1 winds were around 200/17. Decided to divert to ZZZZ1, landed without incident.

## Synopsis

B757-200 flight crew and a Dispatcher reported a Rudder Ratio EICAS Message on approach resulting in a go-around. Winds were out of limits for landing so the flight crew elected to divert a nearby suitable airport.

## Time / Day

Date : 202110

Local Time Of Day : 0601-1200

## Place

Locale Reference.ATC Facility : ZZZ1.TRACON

State Reference : US

Relative Position.Distance.Nautical Miles : 18

Altitude.MSL.Single Value : 2500

## Environment

Light : Daylight

## Aircraft : 1

Reference : X

ATC / Advisory.Tower : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : B737-700

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Final Approach

Airspace.Class B : ZZZ2

## Aircraft : 2

Reference : Y

ATC / Advisory.Tower : ZZZ

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

Airspace.Class B : ZZZ2

## Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : First Officer

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

Experience.Flight Crew.Last 90 Days : 220

Experience.Flight Crew.Type : 220

ASRS Report Number.Accession Number : 1851649



Human Factors : Situational Awareness  
Analyst Callback : Attempted

## Events

Anomaly.Deviation - Altitude : Excursion From Assigned Altitude  
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy  
Anomaly.Inflight Event / Encounter : Wake Vortex Encounter  
Anomaly.Inflight Event / Encounter : Weather / Turbulence  
Anomaly.Inflight Event / Encounter : CFTT / CFIT  
Detector.Person : Flight Crew  
Detector.Person : Air Traffic Control  
When Detected : In-flight  
Result.Flight Crew : Regained Aircraft Control

## Assessments

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

## Narrative: 1

While on a visual approach to ZZZ XXR, with high gusty winds and wake turbulence experienced, aircraft dipped below published altitude while on automation. We began correcting as ATC called out an Altitude Alert on us. We climbed back to published altitude and flew the rest of the approach without incident.

## Synopsis

Air Carrier First Officer reported an altitude excursion from published altitude during approach in gusty wind conditions that also included a wake turbulence encounter. Pilot corrected back to published altitude and completed a safe landing without incident.

## Time / Day

Date : 202110

Local Time Of Day : 0601-1200

## Place

Locale Reference.ATC Facility : ZZZ.ARTCC

State Reference : US

Altitude.MSL.Single Value : 33000

## Environment

Flight Conditions : VMC

Light : Daylight

## Aircraft

Reference : X

ATC / Advisory.Center : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : B737 MAX Series Undifferentiated

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Descent

Route In Use : Vectors

Airspace.Class A : ZZZ

## Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Pilot Flying

Function.Flight Crew : First Officer

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

Experience.Flight Crew.Total : 770

Experience.Flight Crew.Last 90 Days : 177

Experience.Flight Crew.Type : 582

ASRS Report Number.Accession Number : 1850775

Human Factors : Training / Qualification

Human Factors : Situational Awareness

## Events

Anomaly.Deviation - Altitude : Crossing Restriction Not Met

Anomaly.Deviation - Altitude : Undershoot

Anomaly.Deviation - Speed : All Types

Anomaly.Inflight Event / Encounter : Weather / Turbulence

Detector.Person : Flight Crew

Were Passengers Involved In Event : N

When Detected : In-flight

Result.Flight Crew : Requested ATC Assistance / Clarification

Result.Flight Crew : Overcame Equipment Problem

Result.Air Traffic Control : Provided Assistance

## Assessments

Contributing Factors / Situations : Weather

Primary Problem : Weather

## Narrative: 1

On the arrival into ZZZ we were cleared to descend from FL390 to FL310 to cross SLT at 310 with a speed of 280 kts. I checked the descent page on the FMC to make sure the speed was 280 kts. and current Mach of .78. I executed the descend now function (10 miles prior to TD) since the MAX likes to descend faster than programmed. When the aircraft reached the VNAV path it pitched the nose over and continued the descent and increased the VSI. I watched this and extended the speed brakes to try and stop this. The aircraft continued to speed up and we began to encounter light to moderate turbulence. We went from a 30-40 kt. tailwind to a 70 kt. headwind around FL330. When this happened, the aircraft speed jumped up and went into the clacker for around 2-3 seconds. I clicked the AP off and hand flew. I pitched the aircraft to level flight with the speed brakes still extended. We regained our normal speed and I re engaged the AP and stowed the speed brakes. We also notified ATC that we were unable to make our crossing restriction due to slowing for turbulence. They said that it was okay and to continue our descent to cross ZZZZZ at 18,000 ft. We wrote up the overspeed in the logbook and notified Maintenance and I spoke with them at the gate in ZZZ on the details.

## Synopsis

B737 MAX First Officer reported turbulence during descent caused aircraft to overspeed, requiring a reduction of airspeed. This caused the flight crew to request relief from an altitude restriction at a crossing point.

## Time / Day

Date : 202110

Local Time Of Day : 1801-2400

## Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.AGL.Single Value : 500

## Environment

Flight Conditions : VMC

Weather Elements / Visibility : Windshear

## Aircraft

Reference : X

ATC / Advisory.Tower : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : B737 Undifferentiated or Other Model

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Final Approach

Airspace.Class C : 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 : First Officer

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Air Transport Pilot (ATP)

Experience.Flight Crew.Last 90 Days : 59.82

Experience.Flight Crew.Type : 59.82

ASRS Report Number.Accession Number : 1850756

Human Factors : Situational Awareness

Human Factors : Time Pressure

Human Factors : Communication Breakdown

Communication Breakdown.Party1 : Flight Crew

Communication Breakdown.Party2 : Flight Crew

## Person : 2

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Instrument  
Qualification.Flight Crew : Multiengine  
Qualification.Flight Crew : Air Transport Pilot (ATP)  
Experience.Flight Crew.Last 90 Days : 106.85  
Experience.Flight Crew.Type : 2267.50  
ASRS Report Number.Accession Number : 1850758  
Human Factors : Situational Awareness  
Human Factors : Time Pressure

## Events

Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy  
Anomaly.Inflight Event / Encounter : Weather / Turbulence  
Anomaly.Inflight Event / Encounter : CFTT / CFIT  
When Detected : In-flight  
Result.Flight Crew : Overcame Equipment Problem  
Result.Flight Crew : Overrode Automation

## Assessments

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

## Narrative: 1

While on our third leg of the day from ZZZ1 to ZZZ, we received a "too low flaps" below 500 ft. for not being at planned landing flaps. We did not execute a go around and configured to final flaps 30, accomplished the landing checklist, and landed safely. The leg started by being delayed into ZZZ1 on our previous flight and the departing flight being delayed 60 mins. The flight was a quick XX minutes and we were set up and well briefed for the arrival and approach into ZZZ. We began configuring to flaps 10 on an extended base leg and slowed to 190 kts. We were subsequently asked to speed up to 210 kts, went back to flaps 5 and given a dogleg to final for a visual to XXR, backed up by the ILS XXR. Our dogleg had us pointed at the FAF and speed increased in order to sequence in front of other arriving traffic from the west. We then started to slow and configure to flaps 15 with the gear down at the FAF. The winds were gusty and had a 15kt wind additive. The approach was rushed but normal. At 1000 ft. we were not cleared to land and set missed approach altitude. We got landing clearance just prior to the 500 ft. call, which was made immediately after acknowledging landing clearance. We were little fast at the 500 ft. call but stable with gusty winds. Just below 500 ft. feet we got the "too low flaps", recognized the error of being at flaps 15 and configured the jet at flaps 30, accomplished the landing checklist. Touchdown and landing rollout were normal. The event was thoroughly debriefed for CRM error / breakdown and the corrective action of a go around was discussed in depth.

## Narrative: 2

On short final into ZZZ during a visual approach backed up by the ILS to XXL we experienced a "too low flaps" below 500 ft. and failed to go around. As pilot flying, upon hearing this warning and realizing flaps were still at 15, I called for flaps 30 and the landing checklist electing to land instead of going around. Normal touchdown and rollout. Contributing factors included late landing clearance in gusty conditions. Additionally, this was the third leg of a 12 hour duty day.

## Synopsis

Air carrier flight crew reported they received a "too low flaps" warning on approach below 500 feet. The crew elected to not do a go-around and instead configured the flaps correctly and continued to a landing.

## Time / Day

Date : 202110

Local Time Of Day : 0601-1200

## Place

Locale Reference.ATC Facility : RJJJ.ARTCC

State Reference : FO

Altitude.MSL.Single Value : 41000

## Aircraft : 1

Reference : X

ATC / Advisory.Center : RJJJ

Aircraft Operator : Air Carrier

Make Model Name : B747 Undifferentiated or Other Model

Crew Size.Number Of Crew : 3

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Cargo / Freight / Delivery

Flight Phase : Cruise

## Aircraft : 2

Reference : Y

ATC / Advisory.Center : RJJJ

Make Model Name : Commercial Fixed Wing

Flight Plan : IFR

## Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : 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 : 1850535

Analyst Callback : Attempted

## Events

Anomaly.Conflict : Airborne Conflict

Anomaly.Deviation - Altitude : Excursion From Assigned Altitude

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

## Assessments

Contributing Factors / Situations : Environment - Non Weather Related

Primary Problem : Environment - Non Weather Related

## Narrative: 1

I signed in as PIC to relieve [the] Captain. We were cruising at FL410 southbound on R220 with strong quartering headwinds (~220/184) and occasional chop. There was an aircraft at FL400 approximately 20 NM ahead on R220 southbound. When it became apparent that we would be overtaking the aircraft ahead, we discussed offsetting to the right to prevent wake turbulence encounter for the aircraft below us but considering that the winds were from the right, we concluded it would be best to maintain centerline. Approximately 3NM from the aircraft below, we noticed the aircraft was experiencing altitude oscillations of 200-300 feet due to turbulence. We also began to experience some turbulence with slightly lower oscillations. I requested 2NM offset to the right and the First Officer executed the offset. While overtaking the aircraft past position NOGAL, we received a TCAS "Traffic, Traffic" alert followed by an RA "Maintain Level". I disconnected the autopilot and complied with the RA. Once cleared of conflict, I requested for left autopilot and continued to complete the offset. In hindsight, one option I neglected was an attempt to coordinate on 123.45 with the aircraft ahead to see if he would be willing to offset to the right so as to avoid our wake and prevent a possible TCAS event due to turbulence. Another option could have been to perhaps attempt to coordinate with RJJJ via CPDLC. Although, the decision to maintain centerline was made based on safety concerns for the other aircraft, I now see that it would have been much safer to offset 2 miles and avoid the RA and possibly a worse case of altitude separation loss due to worse turbulence than we encountered.

## Synopsis

B747 Captain reported receiving a TCAS RA on an oceanic flight when his aircraft experienced altitude deviations due to turbulence, possibly wake-induced in RJJJ airspace.



## Time / Day

Date : 202110

## Aircraft

Reference : X  
Aircraft Operator : Air Carrier  
Make Model Name : B787 Dreamliner Undifferentiated or Other Model  
Crew Size.Number Of Crew : 3  
Operating Under FAR Part : Part 121  
Flight Plan : IFR  
Mission : Passenger  
Flight Phase : Cruise

## Person

Location Of Person.Aircraft : X  
Location In Aircraft : Flight Deck  
Reporter Organization : Air Carrier  
Function.Flight Crew : First Officer  
Function.Flight Crew : Pilot Not Flying  
Qualification.Flight Crew : Air Transport Pilot (ATP)  
Qualification.Flight Crew : Instrument  
Qualification.Flight Crew : Multiengine  
Experience.Flight Crew.Total : 3889  
Experience.Flight Crew.Last 90 Days : 127  
Experience.Flight Crew.Type : 2439  
ASRS Report Number.Accession Number : 1849882

## Events

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

## Assessments

Contributing Factors / Situations : Weather  
Primary Problem : Weather

## Narrative: 1

Was in the bunk on crew rest when aircraft experienced severe turbulence. On returning to the flight deck crew informed me of severe turbulence event with uncontrollable flight, VMO/MMO exceeded by 20 kts, mountain wave, TCAS EVENT. No injuries to crew or passengers. Aircraft written up for inspection. I have no additional information on the event.

## Synopsis

B787 Relief First Officer reported the aircraft encountered severe turbulence in cruise flight, resulting in temporary loss of control and airspeed and altitude deviations.

## Time / Day

Date : 202110

Local Time Of Day : 0601-1200

## Place

Locale Reference.ATC Facility : ZZZ.ARTCC

State Reference : US

Altitude.MSL.Single Value : 14000

## Environment

Flight Conditions : VMC

Weather Elements / Visibility : Windshear

Weather Elements / Visibility.Visibility : 10

Light : Daylight

Ceiling.Single Value : 15000

## Aircraft

Reference : X

ATC / Advisory.Center : ZZZ

Aircraft Operator : Personal

Make Model Name : Cessna 150

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Flight Plan : VFR

Mission : Personal

Flight Phase : Climb

Route In Use : None

Airspace.Class E : ZZZ

## Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Personal

Function.Flight Crew : Single Pilot

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Private

Experience.Flight Crew.Total : 130

Experience.Flight Crew.Last 90 Days : 22

Experience.Flight Crew.Type : 61

ASRS Report Number.Accession Number : 1849736

Human Factors : Training / Qualification

Human Factors : Situational Awareness

## Events

Anomaly.Deviation - Altitude : Overshoot

Anomaly.Deviation / Discrepancy - Procedural : FAR

Anomaly.Inflight Event / Encounter : Weather / Turbulence

Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control

Detector.Person : Flight Crew

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

## Assessments

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

## Narrative: 1

On Date, I decided to go on a flight practicing my commercial license maneuvers. I went in the morning to try to beat a cold front that was coming over the mountains from the west. There was a cloud layer at 9000 ft. and about 15000 ft. that were both relatively stable and allowing for easy VFR flight around the ZZZ1 area. While practicing approximately 10 to the west-northwest of ZZZ1, I started encountering an impressive downdraft that required full power and a pitch attitude to Vx to maintain altitude. I flew east, further from the mountains, and got in some stable air when I noticed my ground speed heading north and south were drastically different. I was being blown north and couldn't keep the maneuvers within a certain area. I started having sudden altitude changes and was subject to the wind's power. I pointed my nose [to] the south to head into the wind and maintain stable flight. This is when I started climbing at extreme rates and blew through 10000 ft. I attempted to lower my attitude and get back into a descent, which slowed my climb rate but didn't get me out of a climbing rate. I worked to maintain a level flight attitude and positive control while being lifted through 11,12,13 and reaching 14 thousand ft. Without oxygen or ADS-B at this altitude I was worried of the possibility of interfering with ATC operations and hypoxia. Once at 14000 ft., the updrafts calmed and the extreme rate of climb slowed. This is when I decided to turn back to ZZZ1 and get down if I could. I turned back north and still experienced some lift factor, though not as bad. Once over the airport I was able to pull power and conduct a descent back down and land safely. However, knowing I violated Part 91.225 stuck with me and wondering if I caused ATC any grief, I decided to file this. I believe I was riding the front of the cold front that scooped me far beyond my aircraft's service ceiling, 10000 ft. I think this was caused by flight closer to the mountains with a strong front coming through. I learned the true power of frontal systems and know that trying to squeeze a flight right before they bring weather through the area may not be the ideal time to train also, having the Stratux onboard for ADS-B Out capabilities in case of special situations like that. Glad to get down safe!

## Synopsis

C-150 pilot temporarily lost control of the aircraft due to windshear while maneuvering in a mountainous area as a cold front was approaching. An updraft caused the aircraft to climb past its service ceiling. The pilot eventually regained control and returned to departure airport.

## Time / Day

Date : 202110

Local Time Of Day : 0601-1200

## Place

Locale Reference.ATC Facility : ZTL.ARTCC

State Reference : GA

Altitude.MSL.Single Value : 34000

## Aircraft : 1

Reference : X

ATC / Advisory.Center : ZTL

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 : ZTL

## Aircraft : 2

Reference : Y

ATC / Advisory.Center : ZTL

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 : ZTL

## Person

Location Of Person.Facility : ZTL.ARTCC

Function.Air Traffic Control : Enroute

Experience.Air Traffic Control.Time Certified In Pos 1 (yrs) : 1

ASRS Report Number.Accession Number : 1846371

Human Factors : Troubleshooting

Human Factors : Workload

Human Factors : Time Pressure

Human Factors : Communication Breakdown

Human Factors : Situational Awareness

Human Factors : Distraction

Human Factors : Confusion

Communication Breakdown.Party1 : ATC

Communication Breakdown.Party2 : ATC

## Events

Anomaly.ATC Issue : All Types  
Anomaly.Conflict : Airborne Conflict  
Anomaly.Deviation - Altitude : Excursion From Assigned Altitude  
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy  
Anomaly.Deviation / Discrepancy - Procedural : Clearance  
Anomaly.Inflight Event / Encounter : Weather / Turbulence  
Detector.Person : Air Traffic Control  
When Detected : In-flight  
Result.Air Traffic Control : Separated Traffic

## Assessments

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

## Narrative: 1

[It] was a bad day for air traffic controllers, pilots and passengers. Complications due to weather and inadequate staffing put a huge strain on the NAS. It created unsafe situations and pushed air traffic controllers to edge of their breaking point. The volume and complexity of the situation caused controllers to stop accepting hand offs because they could not safely take any more aircraft. Rerouting aircraft off of the east coast out of ZJX and back into ZTL created a bottleneck in the traffic flow. The receiving ZJX controller was quickly overloaded with aircraft and they shut off the ultra high sector and requested some of my aircraft to be vectored away from their airspace. This created a ripple effect. Adjacent sectors and facilities would soon be holding flights that were heading towards ZJX. This caused a major disruption in airline schedules causing canceled and delayed flights. As a result many passengers lives were interrupted. They missed vacations, weddings, funerals and business meetings. The true impact of this event is un-measurable. Not to mention the financial expense this had on the airlines. There was lost revenue and extra fuel cost associated with the longer routes and holding. I believe my experience is one shared by many controllers on this day. However, I don't think you will be hearing about the majority of them since there is a reluctance for air traffic controllers to fill out reports. You will hear from my perspective how one sectors airspace was over loaded and overwhelmed. Please keep in mind that this was also occurring in the sector above me and was a trend that continued throughout the day. Here is how things quickly went from under control to completely overwhelming in my sector. In the southeast portion of my sector there was moderate to extreme precipitation. I don't recall any pilots wanting to fly anywhere near it. We have a steady stream of aircraft flying through my airspace on normal routes to Florida and beyond to places like Mexico and the Caribbean. Without notice I start receiving numerous aircraft from the east also trying to get to Florida and the Caribbean. This was not their normal route. These flights were originally routed through Jacksonville Center sectors (J65 and J66). Now I have a steady stream from the north and a steady stream from the east trying to funnel into Jacksonville sectors (J33 and J34). Jacksonville sector (J33 and J34) was quickly over loaded. We were calling on what felt like every hand off because they were not being taken in a timely fashion. This caused a lot of our attention to be focused on that southern boundary while we tried to blend the two streams of traffic. At some point I was told that Florida was closed and ZJX was not taking anymore. This was extremely confusing because I have never heard of a state closing. What were they talking about? Florida is closed!!! Does that mean over flights or flights landing in Florida. What also added to the confusion is that ZJX was still taking some of my flights while others I was forced vectored out of my airspace into an

adjacent ZTL sector. I do not know what happened to those flights. At one point I called ZJX asking them to tell me what they needed. The stress of not knowing what aircraft they would take and what aircraft needed to be vectored out took its toll on me. At some point during all this confusion I see Aircraft X northbound in conflict with Aircraft Y southwest bound. They were both at FL340. Aircraft Y was an offload and not on a normal route. As soon as I see the conflict I descended Aircraft X to FL320. No answer!!! I try again and once again no answer!!! At this point they are flashing. I don't have many options with the Aircraft Y, I can't turn him left due to the bad weather just south of him. I can't climb him because the sector above is also saturated with off loads, volume and complexity. I decided to descend the Aircraft Y since I do not have communications with the Aircraft X. I tell the Aircraft Y, to descend and be level in a minute or less. While I am doing this ZJX calls. I assume they see the flashing and still have radio communications with the Aircraft X. My D side then coordinates the Aircraft X descending to FL320. Now I have two planes in conflict that are both descending. I went back and asked the Aircraft Y to climb back up to FL340. I see the Aircraft X start to descend out of FL340 then he returns to FL340. Aircraft X does eventually descend to FL320 and loss of separation was avoided. I jumped on the landline and shouted out to ZJX to switch the Aircraft X. At that point he was 20 miles inside my airspace and ZJX hadn't switched him yet. I believe that traffic volume and unusual traffic flow contributed to this situation. The sector above me had it even worse than I did. ZJX had stopped taking many of his hand offs. Hampton was forced to spin multiple aircraft. They also were continuously fed the stream of aircraft that would have normally been flying down the east coast and have never entered their air space. I think the important thing to realize is that no notice holding that was occurring in the sector above me is not uncommon. I personally have on a previous occasion had to spin out 4 aircraft all going to different airports because ZJX refused to take the hand offs. I vectored them around in a red (very busy) sector while we figured out what ZJX wanted us to do them. Apparently they wanted them on different routes outside of their airspace. The FAA needs to do a better job of being aware of triggers that could lead us into similar situations. I believe that ZJX should have been "ATC alert staffing trigger". I have heard from multiple sources that ZJX was under staffed. Coworkers stated that J34/J33 were down to 4 controllers when they should have had 8. It was also stated that they were pushing 4 hours on position. If this true they should have been ATC alert staffing trigger. To my knowledge the alert was never issued. Had the alert been issued then perhaps the traffic flow could have been reduced to alleviate the stress on the controllers. Instead what happened is that we attempted to dump many extra planes into J34/J34 and the sectors that could not handle the volume. Even if sectors J33 and J34 had extra staffing they have no way to split the sectors into a high and ultra high. It is my opinion that they should divide the airspace. Instead of owning FL240-FL600 it should be divided so they can split off FL240-FL340 and FL350-FL600. They need a high and ultra high sector. That way when volume picks they can manage a greater number of aircraft. It will be a safer operation because you will minimize the number of planes a controller has to watch. This will allow for increased focus and attention on individual flights. This is especially important in unusual situations like this one or when weather is impacting their sectors. They also won't be as quickly overwhelmed. Another suggestion is to create an ATC alert weather trigger to our current list of potential triggers. To my knowledge this is not a current option. Clearly in this situation planes needed to be routed around the weather. The problem is that we were funneling 2 sectors worth of traffic into one sector. It was clearly too much volume for the airspace. We were operating above max capacity. These sectors were not designed for this flow/routes or volume. Perhaps had there been a "ATC alert weather trigger" in the impacted sector some of this could have been avoided. It would have gotten attention sooner instead of last minute reaction and knee jerk decisions. Prior planning would have been extremely helpful in this situation. I can think of other instances on different days when ZJX shut the door and put us in no notice holding. I think if they are

getting overwhelmed the sooner they let us know the better. We can begin formulating a plan and maybe start slowing down the aircraft. We could potentially start spacing out planes. The problem is when they shut the door we are typically already busy and then we are crazy busy spinning aircraft. This trend of holding aircraft continued into the evening shift. I really hope someone looks at the big picture and traffic flow on date. This problem didn't just affect my area and ZJX. The back up was in other ZTL sectors and other facilities. I'm not sure if you are aware of this but ZTL, ZJX and NATCA all were mentioned on news. They were referencing the flight delays and staffing shortages. This is getting national attention outside of the agency. I have to say this was extremely stressful situation. It took its toll on me and my co-workers. I imagine it created stress in the cockpit and on the flying public. We have to do better. We need to find ways to keep situations like this to minimum. It is my hope that we work together to come up with some solutions. When situations like this come up again that we can have a plan to help mitigate the effects on passengers, controllers and pilots.

## Synopsis

ZTL Center Controller reported traffic flow management issues during weather conditions.



## Time / Day

Date : 202110

Local Time Of Day : 1201-1800

## Place

Locale Reference.ATC Facility : ZZZ.TRACON

State Reference : US

Altitude.MSL.Single Value : 10000

## Aircraft

Reference : X

Aircraft Operator : Air Carrier

Make Model Name : Dash 8 Series Undifferentiated or Other Model

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Final Approach

## Component

Aircraft Component : Pressurization System

Aircraft Reference : X

Problem : Improperly Operated

## Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Pilot Flying

Function.Flight Crew : Captain

Qualification.Flight Crew : Air Transport Pilot (ATP)

ASRS Report Number.Accession Number : 1845978

Human Factors : Situational Awareness

Human Factors : Distraction

Human Factors : Workload

## Events

Anomaly.Aircraft Equipment Problem : Less Severe

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

Anomaly.Inflight Event / Encounter : Unstabilized Approach

Anomaly.Inflight Event / Encounter : Weather / Turbulence

Detector.Person : Flight Crew

When Detected : In-flight

Result.Flight Crew : Became Reoriented

Result.Flight Crew : Executed Go Around / Missed Approach

Result.Flight Crew : Overcame Equipment Problem

Result.Flight Crew : Returned To Departure Airport

## Assessments

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

## Narrative: 1

The weather was much worse than forecast. Wind gusting to 50kts. I attempted the ILS. We briefed and set up for a wind shear landing (bleeds off, props 1020). I was unable to keep the aircraft on a stabilized approach, and conducted a miss. In the subsequent miss, climb out, call approach, plan a return to ZZZ, call Dispatch, talk to the flight attendants, and talk to the passengers, we forgot to turn the bleeds back on. Climbing thru 10,000 ft, the master caution "cabin altitude" illuminated. We knew immediately what the problem was, ran the checklist, and restored pressurization. This was an extremely difficult approach that had both crew members taxed to their maximum. With all the procedures to follow, and still try to fly the aircraft safely, it was simply task overload, and switching the bleeds back on during initial climb out got missed. We were able to restore pressurization quickly, once we had the time to deal with the issue. Lessons learned; go slower, and more methodical regardless of the situation. Make sure each item on the checklist, or flow is accomplished.

## Synopsis

Captain reported a high workload led to the flight crew missing the restoration of engine bleeds, leading to a pressurization issue until it was recognized.

## Time / Day

Date : 202110

Local Time Of Day : 0601-1200

## Place

Locale Reference.ATC Facility : ZJX.ARTCC

State Reference : FL

## Environment

Flight Conditions : Marginal

Weather Elements / Visibility : Turbulence

Weather Elements / Visibility : Thunderstorm

## Aircraft

Reference : X

ATC / Advisory.Center : ZJX

Aircraft Operator.Other

Make Model Name : Any Unknown or Unlisted Aircraft Manufacturer

Operating Under FAR Part.Other

Flight Plan : IFR

Mission.Other

Flight Phase : Climb

Flight Phase : Cruise

Flight Phase : Descent

Route In Use : Oceanic

Route In Use : Vectors

Airspace.Class A : ZJX

## Person : 1

Location Of Person.Facility : ZJX.ARTCC

Reporter Organization : Government

Function.Air Traffic Control : Instructor

Function.Air Traffic Control : Enroute

Qualification.Air Traffic Control : Fully Certified

Experience.Air Traffic Control.Time Certified In Pos 1 (yrs) : 15

ASRS Report Number.Accession Number : 1845822

Human Factors : Confusion

Human Factors : Time Pressure

Human Factors : Workload

Human Factors : Distraction

## Person : 2

Location Of Person.Facility : ZJX.ARTCC

Reporter Organization : Government

Function.Air Traffic Control : Enroute

Qualification.Air Traffic Control : Fully Certified

Experience.Air Traffic Control.Time Certified In Pos 1 (mon) : 10

ASRS Report Number.Accession Number : 1844686

Human Factors : Workload

Human Factors : Time Pressure  
Human Factors : Situational Awareness  
Human Factors : Distraction  
Human Factors : Communication Breakdown  
Human Factors : Confusion  
Communication Breakdown.Party1 : ATC  
Communication Breakdown.Party2 : ATC

## Events

Anomaly.Airspace Violation : All Types  
Anomaly.ATC Issue : All Types  
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy  
Anomaly.Inflight Event / Encounter : Weather / Turbulence  
Detector.Person : Air Traffic Control  
When Detected : In-flight  
Result.Air Traffic Control : Provided Assistance  
Result.Air Traffic Control : Issued New Clearance  
Result.Air Traffic Control : Separated Traffic

## Assessments

Contributing Factors / Situations : Airspace Structure  
Contributing Factors / Situations : Company Policy  
Contributing Factors / Situations : Human Factors  
Contributing Factors / Situations : Procedure  
Contributing Factors / Situations : Weather  
Primary Problem : Company Policy

## Narrative: 1

I was working many positions this session: RXX/TXX/DXX/DXY/RXY The volume of traffic became so intense we had to stop taking hand offs from ZTL. In turn they stopped taking hand offs from us. I'm sure there were many aircraft north and southbound that hit other airspace without a proper point out or a hand off. It was so complex that even with as many people as we had over there to handle the situation it could not be accomplished. Command Center denied all of our requests for help to slow down the traffic so we could do our job properly. Give us help from the Command Center when everyone in the country has to go around the weather into one hole between the military exercises and airspace. There is simply too much volume for one or even two controllers to handle. Maybe an ultra-high could have helped with the frequency congestion.

## Narrative: 2

At XA: 10am local I came into work and saw a large weather system extending from just east of SZW toward CHS, causing aircraft to go into the Warning Areas over the Atlantic. We were advised the military was recalling airspace (which we have no power to deny) and because of (Military Training Exercise) no aircraft would be permitted to deviate into the airspace once activated. We told our supervisors and Traffic Management Unit if this were the case, all southbound aircraft that were not able to fly the Atlantic routes would have to be routed something similar to CAE..DBN..VNA..SZW. This would cause all southbound traffic to be routed through two sectors XX/XY which do not have an ultra high and are FL240-600. When what we predicted started to unfold, we were told Command Center thought what we needed was too restrictive. XX/XY were already red sectors, it what they didn't know is roughly 85% of our traffic were on bad routes and were going to be added to the already unsafe numbers at XX/XY. This resulted in chain reaction no

notice holds. After complaining for hours, we were told ZTL would not issue reroutes. This was by and far one of the most unsafe situations I had witnessed. Additionally, I overheard that Command Center was pressuring us to come out of ground stops while sectors were holding aircraft. Command Center constantly limits our ability to manage traffic and results in extremely unsafe situations. I have been told several Traffic Management Coordinators that have went to Command Center from ZJX go to terminal areas, thus wasting the knowledge they possess about our complex military/funnel/weather structure. It was clear that yesterday safety was not a priority in the National Airspace System and the Command Center introduced risk into the system by trying to overload the system and pressuring it to break.

## Synopsis

Two Jacksonville Center Controllers reported FAA Command Center would not comply with their request for traffic flow restrictions for known weather, causing operational challenges.

## Time / Day

Date : 202110

Local Time Of Day : 0601-1200

## Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Relative Position.Distance.Nautical Miles : 8

Altitude.MSL.Single Value : 4

## Environment

Flight Conditions : IMC

Weather Elements / Visibility : Rain

Weather Elements / Visibility.Visibility : 0

Light : Dawn

Ceiling.Single Value : 1000

## Aircraft

Reference : X

ATC / Advisory.Tower : ZZZ

Aircraft Operator : Corporate

Make Model Name : Commercial Fixed Wing

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Flight Plan : None

Flight Phase : Cruise

Route In Use : Visual Approach

## Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Corporate

Function.Flight Crew : Single Pilot

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Commercial

Qualification.Flight Crew : Multiengine

Experience.Flight Crew.Total : 416

Experience.Flight Crew.Last 90 Days : 61

Experience.Flight Crew.Type : 396

ASRS Report Number.Accession Number : 1845774

Human Factors : Training / Qualification

Human Factors : Situational Awareness

## Events

Anomaly.Deviation / Discrepancy - Procedural : FAR

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

Anomaly.Inflight Event / Encounter : VFR In IMC

Anomaly.Inflight Event / Encounter : Weather / Turbulence

Anomaly.Inflight Event / Encounter : CFTT / CFIT

Detector.Person : Flight Crew

When Detected : In-flight

Result.Flight Crew : Landed in Emergency Condition

Result.Flight Crew : Requested ATC Assistance / Clarification

## Assessments

Contributing Factors / Situations : Human Factors

Contributing Factors / Situations : Weather

Primary Problem : Human Factors

## Narrative: 1

As a single pilot flying a tour in with 6 passengers, I took off in VFR conditions and proceeded to do my standard tour route around the island. Prior to takeoff, I had checked the weather and radar reports. The weather was not perfect VFR conditions as usual around the island. However, the visibility was above VFR minimums and the ceiling was high enough to clear terrain with more than 1,000 feet of clearance around the island and my planned route of flight. There was some rain and cloud cover but nothing that indicated rapidly deteriorating conditions. After completing about 80% of my tour along the coast, the weather closed in quickly and I suddenly found myself in hard IMC. The coast of the island is nearly always clear so I had not expected to be enveloped in clouds so completely. I checked the ATIS and got the current weather at ZZZ about 5 minutes earlier. I then contacted the Tower saying my position was approximately 10 miles North of the airport and was currently in hard IMC. I asked for vectors to final but the Tower was unable to guide me to the airport. They instructed me to contact ZZZ Center which I did. ZZZ Center could not give me vectors either because I was at 4,000 feet MSL and they needed me to be at a minimum of 7,000 feet MSL. I was close to the field and wanted to maintain positive control of the airplane so I decided it would not be ideal to start a 3,000 feet climb at that time. My instrument flying skills were invaluable in maintaining control of the airplane. Focusing on the airspeed indicator and attitude indicator where the keys to maintaining altitude and avoiding a stall or spin. After weighing my options and hearing another pilot on the radio suggest it, I decided to advise ATC. ZZZ Center then instructed me to contact ZZZ Tower again. The Tower Controller gave me vectors towards the airport. After about 5 minutes, I was on the left downwind for Runway XX and could see the runway clearly. The Tower then gave me a clearance to land. Upon landing uneventfully, there were no injuries or damage to the aircraft or property. In hindsight, I should have canceled the flight as the weather was changing so rapidly. I learned a valuable lesson regarding the unique weather characteristics of flying around an island with weather conditions that change by the minute. I hesitated to advise ATC because I did not think I was in an [urgent] situation. In addition, I did not want my passengers to panic. They all heard my radio communications and despite advising ATC, all of them remained calm. I explained to them that we had plenty of fuel and there was nothing mechanically wrong with the airplane. After some deliberation, advising ATC was the only way for me to get back to the airport safely.

## Synopsis

Air Tour pilot reported entering IMC on a VFR flight. Contacted ATC for vectors back to VFR conditions.

## Time / Day

Date : 202110

Local Time Of Day : 0601-1200

## Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Relative Position.Angle.Radial : 270

Relative Position.Distance.Nautical Miles : 5

Altitude.MSL.Single Value : 10500

## Environment

Flight Conditions : VMC

Weather Elements / Visibility : Turbulence

Weather Elements / Visibility.Visibility : 10

Light : Daylight

Ceiling.Single Value : 10000

## Aircraft

Reference : X

ATC / Advisory.UNICOM : ZZZ

Aircraft Operator : Personal

Make Model Name : Bonanza 35

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Flight Plan : None

Mission : Personal

Flight Phase : Climb

Route In Use : None

Airspace.Class E : ZZZ1

Airspace.Class G : ZZZ1

## Component

Aircraft Component : Fuel Selector

Aircraft Reference : X

Problem : Improperly Operated

Problem : Design

## Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Personal

Function.Flight Crew : Single Pilot

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Flight Instructor

Experience.Flight Crew.Total : 11498



Experience.Flight Crew.Last 90 Days : 240  
Experience.Flight Crew.Type : 35  
ASRS Report Number.Accession Number : 1845466  
Human Factors : Training / Qualification  
Human Factors : Confusion

## Events

Anomaly.Aircraft Equipment Problem : Critical  
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy  
Anomaly.Inflight Event / Encounter : Fuel Issue  
Anomaly.Inflight Event / Encounter : Weather / Turbulence  
Detector.Person : Flight Crew  
When Detected : In-flight  
Result.Flight Crew : Diverted  
Result.Flight Crew : Landed As Precaution  
Result.Flight Crew : Took Evasive Action  
Result.Flight Crew : Landed in Emergency Condition

## Assessments

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

## Narrative: 1

On a pleasure flight around the area. I flew from my home base ZZZ1 to the area of ZZZ. During the flight I was burning fuel from the LEFT main tank per the normal fuel management procedure. As all fuel is returned to the LEFT tank on my airplane. As the flight progressed, I burned fuel first from the LEFT tank, then from the RIGHT tank back to the left tank then to the AUX tank. At this point I had encounter some pretty heavy moderate turbulence and as I was attempting to select the fuel selector back to the LEFT tank I inadvertently selected the RIGHT tank from the AUX position. On my aircraft the location of the fuel selector is below my left leg making it very difficult to see. My aircraft also is equipped with only one fuel gauge and a switch to toggle between left and right tank. As I made my way around ZZZ airport and was turning to return to ZZZ1, the engine quit. At this point I turned to return to ZZZ airport and ran through the engine failure procedure. I verified the fuel in the left tank and thinking I had the left tank selected from before, I did not reach down to verify it by hand. Had I done that I would have caught my error. I was near the airport at this point, so I devoted my attention to safely returning to the airport, rather than further troubleshoot my failure. I made a radio broadcast on the UNICOM frequency and landed on Runway XX. The landing was uneventful and I was able to rollout and clear the runway. Ground support personnel met the aircraft and towed me to a parking area by the FBO. As I climbed out of the aircraft I looked down and the Fuel selector and realized my error. A visual inspection of the right fuel tank confirmed it, I had run the tank dry. After refilling the right tank and selecting the left tank the engine fired right up. The cause of the incident was not verifying the correct fuel tank per the fuel management schedule. Contributing factors: Pilot proficiency in aircraft type. Although I fly a lot it is not in this specific aircraft. More proficiency would have made me more mindful of the unique fuel management schedule of this aircraft, and made me more familiar with the fuel selector by feel rather than visually. Which is more difficult based on its location. Another contributing factor is the fuel gauge design of the aircraft. Having two gauges installed would draw attention to an empty tank and trigger a verification of the fuel selector. Environmental factors, bouncing around in the turbulence made the error

easier by causing the distraction during the fuel selection process. This incident has driven home the importance of staying proficient in the different aircraft that I intend to fly regularly. It has also driven a commitment to upgrade some systems and displays in my aircraft.

## Synopsis

BE-35 pilot reported the engine quit after having selected the wrong fuel tank during scheduled fuel management procedure. The pilot decided to successfully divert and land at the nearest airport rather than troubleshoot in the air.

## Time / Day

Date : 202110

## Place

Locale Reference.ATC Facility : ZZZ1.Tower

State Reference : US

Altitude.AGL.Single Value : 100

## Environment

Flight Conditions : IMC

Weather Elements / Visibility : Thunderstorm

## Aircraft

Reference : X

ATC / Advisory.Tower : ZZZ1

ATC / Advisory.TRACON : ZZZ3

Aircraft Operator : Air Carrier

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

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase.Other

Airspace.Class C : ZZZ2, ZZZ1

Airspace.Class E : ZZZ4

## Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Captain

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Air Transport Pilot (ATP)

Experience.Flight Crew.Total : 5841

Experience.Flight Crew.Last 90 Days : 210

Experience.Flight Crew.Type : 5841

ASRS Report Number.Accession Number : 1845166

Human Factors : Human-Machine Interface

Human Factors : Time Pressure

Human Factors : Training / Qualification

Human Factors : Workload

Human Factors : Distraction

## Events

Anomaly.Inflight Event / Encounter : Weather / Turbulence

Anomaly.Inflight Event / Encounter : Unstabilized Approach

Detector.Automation : Aircraft Other Automation

Detector.Automation : Aircraft Terrain Warning

Detector.Person : Flight Crew  
When Detected : In-flight  
Result.Flight Crew : Requested ATC Assistance / Clarification  
Result.Flight Crew : Executed Go Around / Missed Approach  
Result.Flight Crew : Diverted  
Result.Flight Crew : Became Reoriented  
Result.Air Traffic Control : Issued New Clearance

## Assessments

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

## Narrative: 1

After a 1-hour maintenance delay in ZZZ, we set off for ZZZ1. The flight was uneventful until we began to descend into ZZZ1. The forecast for our original arrival had been winds 220/6, 6 SM, BKN 100, VCSH. So, while the weather wasn't spectacular, it certainly wasn't something we were concerned about when we departed. Even at the time of the delayed departure, the weather had not changed from the forecast. Prior to top of descent, all briefings were completed. Threats acknowledged (short runway, possibly wet, landing distance, night, go-around into possible weather, autobrakes max and windshear potential). As such we choose Flaps 40, autobrakes maximum, for a landing distance of about 5,000 feet. We only had 2 selections, normal or good braking at MAX AB, after that there were no options for autobrakes, something I remarked during the brief as a definite threat given the short runway. As we descended in ZZZ1 on the arrival, we began to see numerous thunderstorms and lightning, but nothing at the airport. Below 9,000 feet it was clear and we could see the airport, but to the North, South and West, thunderstorms were everywhere and the lightning was out of a movie, turning night into day. With just one aircraft in front of us, we were on vectors to the ILS XXR. Again, no weather or Thunderstorms within 10-15 miles of the airport and the weather that was there was North, South and West of the airport. We were slowed and fully configured by the FAF. The approach was stable throughout, only with some slight deviations due to winds and light turbulence. Throughout the approach I keep thinking about the go-around and possible windshear, but knowing all along, I really don't want to have to go-around into it. As the aircraft in front of us landed and cleared the runway, we were given clearance to land at 600-700 ft. Winds were reported less than 10 knots with no gust. At about 100 feet before landing, I began to feel the airplane start to encounter some gusts, nothing unstable, just making me work for it. I remember thinking to myself, this shouldn't be this hard given the reported conditions. At about 50 feet, I began to feel the airplane sink, I added power, no luck, added more, still no luck. I made the decision in my mind to go-around, and at that exact same moment the GPWS screamed, "Windshear, Windshear, Windshear". Without hesitation I slammed the throttles to the forward stops, rotated to approximately 15 degrees, pushed TOGA and held my breath. For a brief moment, it seemed as if nothing happened. I'm honestly not sure if we got the warning again as I became focused on flying the plane and getting away from the ground. Within about 3-4 seconds I could see our airspeed vector immediately start a positive trend and Instantaneous Vertical Speed Indicator (IVSI) was climbing at 4,000-6,000FPM. I immediately felt we were out of the event so I began calling for the go-around configuration changes and cleaned up the airplane. However, our event wasn't over, after telling the Tower of the windshear event, we now needed to navigate the numerous thunderstorms that were West of the airport. We asked for an immediate left turn to a downwind, which was granted and kept clear of the storms. Now, we had a decision to make. Make another attempt, or divert. Having the

fuel, we choose to head in the direction of another approach. ATC vectored us behind Aircraft Y who was on approach. We felt that if Aircraft Y was able to land, we would at least consider an attempt. However, as we started the approach, Aircraft Y went around for windshear. At that point, I made the decision to abandon the approach and immediately head to ZZZ2. After we completed the After Take Off checklist (for the second time), declared MIN FUEL, flew some vectors, reviewed the ZZZ2 10-7 and 9 pages, approach brief/threats and deviations for weather, we landed "uneventfully" in ZZZ2. So, commence the debrief. What went well? First, my gut told me I should fly this leg. Despite trying to get the training done, it seemed for me to be the safest option. We all have moments like these in our IOE's. Trust yourself, if you think you should fly, then fly. This is where (CRM/TEM) Planning and Decision Making, along with leadership come in. Remember, safety is our number one priority. Next, our threat forward briefing during the descent check was critical (Situational Awareness/Communication). When I briefed the windshear escape, little did I realize I'd be using it. Also, during the maneuver, I did see my First Officer (FO) ensure the speed brakes were stowed, an outstanding back up. What could have gone better? The one part of this we didn't review was how the Pilot Monitoring (PM) responds to the windshear escape. They provide key information to you when you are in the middle of a windshear event. This won't be something I'll soon forget to mention when I brief windshear. Next, the actual windshear escape/go-around. It happens so fast in actual operation, yet in the simulator we all know it's coming, as well as, what to do and what to say. Without identifying and briefing it, I would guess the PM might not be saying anything as they are reacting to the event. In our case, the FO, after being startled by the GPWS alert, was back in the loop as I called for the go-around configuration changes. Throughout the actual windshear event, I didn't hear him say anything. During our debrief, he knew what he was supposed to say, but because of the "startle" (distraction), by the time he gathered himself, the event was over. Also, since we hadn't reviewed it in the threat forward briefing, it was understandable given his experience. However, he was right there with me on the go-around procedures and clean up. This, I believe, was because we briefed the GA procedure and he was fully aware of his responsibilities (Communication and SA). Now the divert. Simple right, just tell dispatch and ATC, plug it into the FMC RTE page, load the approach and go (Automation/Workload Management). That is of course would be simple, if you aren't coordinating with dispatch, ATC to deviate for thunderstorms, being almost on top of the airport deviating too, and while all the while watching your fuel state getting lower and declaring MIN FUEL (time compression). This is where we could have reviewed the diversion guide in the FOM, but we choose to forgo that due to time constraints and weather. Also, as diverting airports went, ZZZ2 was the only airport that was not being affected by the weather. Furthermore, we reviewed the ATIS and NOTAMs, but did not ask Dispatch for landing data. We did however; do an evaluation of our landing data per the FM, by reviewing the 10-7 page which lists no special engine out for our landing runway (Rwy XXR, 10,200ft), and we also knew we had the landing distance based on our data from ZZZ1 and the FM. Another not so well, was we forgot to re-cruise the FMC. As a result, we were unable to load the ILS approach. I'm here to say the re-cruise, "slipped" my mind. That led us to not being able to load the FMC ILS approach due to altitude constraints. However, I did have the FO load the ILS in the FMC, which gave us a white line depiction of the approach despite being unable to execute it. Given the VFR conditions, we were able to fly a visual approach and back it up with the ILS. Next, where is the communication with the Flight Attendants? An area that was really tough. Given the time compression, after the go-around and we deviated away from the thunderstorms, I called the Flight Attendant's and told them what happened, and let them know that we were diverting to ZZZ2. I asked the Purser if she could tell the passengers, as I just didn't have time to make a PA (Workload Management). Once we landed, we still had to coordinate with operations and the passengers upon landing to determine what to do. Keeping the people informed was my biggest concern. I went into the cabin to let the

passengers know I was sorry about not getting them into ZZZ1 and for having a delay in talking to them about the divert. Given the weather everyone saw out the window, no one seemed to mind and most were thankful we were just on the ground safely. The final resolution was the flight canceled in ZZZ2 due to the ZZZ1 curfew and the passengers were bused to ZZZ1. This took almost an hour after we parked.

## Synopsis

An Air Carrier pilot reported executing a go around due to encountering Wind Shear and receiving a Ground Proximity Warning. The flight diverted to a nearby airport.

## Time / Day

Date : 202110

Local Time Of Day : 1201-1800

## Place

Locale Reference.ATC Facility : ZJX.ARTCC

State Reference : FL

## Environment

Flight Conditions : Marginal

Weather Elements / Visibility : Thunderstorm

## Aircraft

Reference : X

ATC / Advisory.Center : ZJX

Make Model Name : Any Unknown or Unlisted Aircraft Manufacturer

Flight Plan : IFR

## Person

Location Of Person.Facility : ZJX.ARTCC

Reporter Organization : Government

Function.Air Traffic Control : Enroute

Qualification.Air Traffic Control : Fully Certified

Experience.Air Traffic Control.Time Certified In Pos 1 (yrs) : 7

ASRS Report Number.Accession Number : 1844709

Human Factors : Communication Breakdown

Human Factors : Confusion

Human Factors : Distraction

Human Factors : Physiological - Other

Human Factors : Time Pressure

Human Factors : Workload

Human Factors : Fatigue

Communication Breakdown.Party1 : ATC

Communication Breakdown.Party2 : ATC

## Events

Anomaly.ATC Issue : All Types

Anomaly.Deviation - Track / Heading : All Types

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

Anomaly.Deviation / Discrepancy - Procedural : Clearance

Anomaly.Inflight Event / Encounter : Weather / Turbulence

Anomaly.No Specific Anomaly Occurred : Unwanted Situation

Detector.Person : Air Traffic Control

When Detected.Other

Result.General : None Reported / Taken

## Assessments

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

## Narrative: 1

We had been working red sectors since I had arrived at XA:30. All Controllers were plugged in much of the day and only time we were able to regroup were when things reached a level of chaos with frequency congestion and aircraft getting too close on a routine basis that we began refusing handoffs. As soon as we got things under control the volume steadily rose again with no intrail assistance until we had to refuse hand offs from adjacent sectors and facilities once again to manage the traffic and frequencies. By this point many people were at the ends of their shifts and a few that had numerous concerning situations and were unable to return to the operation due to overwhelming stress as a result from failure of Facility Management, Traffic Management and Command Center Operations to provide us with even a chance of maintaining a safe sector of airspace that we were responsible for. As staffing overlap ended and traffic volume did not. We once again were all plugged in with only one D Side only Controller to assist at any sector. This person ultimately reached 10 hours as well. At this point all Controllers were plugged in without any help available approaching egregious on position time. The Supervisor told me that the list was not accurate due to all the restrictions that were out and wanted to combine 86 with 16. I told the Supervisor that if the URET (User Request Evaluation Tool) was wrong and numbers would not overload the sector with the weather that was requiring deviations then I would work it. The sectors were combined and very shortly after I realized that the traffic was not slow enough to manage the two frequencies with deviation request and constant route amendments from poor flight plan routes for the amount of aircraft at a constant steady pace. My concentration at this point is failing, my cognitive abilities had been abused for too long and my speed to perform routine task were approaching complete stall. I believe the 86 Controller was even pulled to assist another Controller at that point. I was too busy trying to focus on my sector to know what was happening elsewhere in the area. Staffing at the facility is not sufficient to handle massive shifts in traffic flow during weather events. The nature of ZJX airspace with military airspace constrictions accompanied by weather cannot maintain an overall facility flow rate through 1/3 of the airspace without some help. We are taught to split sectors that are showing red 100 rate for a sector weather it is showing for 1 minute or steady. No matter what you split the sector for precaution. Why is traffic flow not treated the same way in a region known for severe storms and literal squeeze of airspace. Also TMU cannot just allow aircraft off without proper routings, this caused a massive increase of workload fixing routes that were inconsistent and completely ignored SOP. The pilots were constantly questioning their routes and requesting different ones because they did not think the routes were necessary or make sense. This only causes frequency issues and coordination requirements increasing workload even more. Also when such major shifts occur in traffic there has to be assistance. If we are required to provide spacing to O'hare in Florida to ZTL then other facilities can provide in trail to ZJX on aircraft landing in Florida. Management and Command Center needs to take flow restrictions more seriously when ZJX requests them.

## Synopsis

A ZJX Center Controller reported insufficient ATC staffing and lack of sector flow management initiatives despite requests from Controllers resulting in sectors overloaded



with traffic, frequency congestion, and Controllers refusing to take handoffs. The reporter was unable to concentrate and lost ability to perform required tasks. Other Controllers could not return to the work area after breaks due to undue stress.

## Time / Day

Date : 202110

Local Time Of Day : 1801-2400

## Place

Locale Reference.ATC Facility : ZMA.ARTCC

State Reference : FL

Altitude.MSL.Single Value : 3000

## Environment

Weather Elements / Visibility : Thunderstorm

Light : Night

## Aircraft

Reference : X

ATC / Advisory.Center : ZMA

Make Model Name : Small Aircraft, Low Wing, 1 Eng, Retractable Gear

Crew Size.Number Of Crew : 1

Flight Plan : IFR

Flight Phase : Final Approach

Route In Use.Other

Airspace.Class E : ZMA

## Person

Location Of Person.Facility : ZMA.ARTCC

Reporter Organization : Government

Function.Air Traffic Control : Enroute

Qualification.Air Traffic Control : Fully Certified

Experience.Air Traffic Control.Time Certified In Pos 1 (yrs) : 3

ASRS Report Number.Accession Number : 1844673

Human Factors : Distraction

## Events

Anomaly.Deviation - Altitude : Excursion From Assigned Altitude

Anomaly.Deviation - Track / Heading : All Types

Anomaly.Inflight Event / Encounter : Weather / Turbulence

Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control

Detector.Person : Flight Crew

When Detected : In-flight

Result.Flight Crew : Regained Aircraft Control

Result.Air Traffic Control : Provided Assistance

## Assessments

Contributing Factors / Situations : Weather

Primary Problem : Weather

Narrative: 1

The pilot was filed to land at OBE and change destinations to AVO due to severe thunderstorms. I vectored the aircraft direct OMIGE for the RNAV Runway 05 approach and issued him to maintain 3,000 ft. As he was approaching OMIGE I noticed he was in a northbound turn and asked if he was entering a procedure turn or something. He responded, "I'm in trouble". I asked for the nature of the emergency and he said he was in a microburst and could not control the aircraft. I tried to remain calm and told him course and altitude is his discretion and to try to maintain level wings and penetration airspeed. I observed a sharp climb and a rapid turn to the north. I offered him vectors to LAL and he was able to regain control of the aircraft and accept vectors to the Lakeland airport. I handed him off to Tampa approach and thank god he landed safely. I have never been more scared for another person in my life. I would recommend that this pilot not fly near severe thunderstorms and stay safe on the ground.

## Synopsis

ZMA ARTCC Controller reported an aircraft was caught in a microburst and eventually regained control of the aircraft after vectoring to another airport.

## Time / Day

Date : 202109

Local Time Of Day : 1801-2400

## Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Relative Position.Distance.Nautical Miles : 15

Altitude.MSL.Single Value : 23000

## Environment

Flight Conditions : VMC

Weather Elements / Visibility.Visibility : 10

Light : Daylight

Ceiling.Single Value : 23000

## Aircraft

Reference : X

ATC / Advisory.Center : ZZZ

Aircraft Operator : Corporate

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

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Passenger

Flight Phase : Initial Climb

Route In Use : Direct

## Component

Aircraft Component : Turbine Engine

Aircraft Reference : X

Problem : Malfunctioning

## Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Corporate

Function.Flight Crew : Captain

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Flight Instructor

Experience.Flight Crew.Total : 2800

Experience.Flight Crew.Last 90 Days : 200

Experience.Flight Crew.Type : 400

ASRS Report Number.Accession Number : 1844438

Human Factors : Troubleshooting

## Events

Anomaly.Aircraft Equipment Problem : Critical  
Anomaly.Inflight Event / Encounter : Weather / Turbulence  
Detector.Person : Flight Crew  
When Detected : In-flight  
Result.General : Evacuated  
Result.General : Flight Cancelled / Delayed  
Result.General : Maintenance Action  
Result.Flight Crew : Inflight Shutdown  
Result.Flight Crew : Returned To Departure Airport  
Result.Flight Crew : Landed in Emergency Condition  
Result.Flight Crew : Requested ATC Assistance / Clarification  
Result.Air Traffic Control : Provided Assistance

## Assessments

Contributing Factors / Situations : Aircraft  
Primary Problem : Aircraft

## Narrative: 1

2 Crew on board only. We departed ZZZ after all normal flight occurrences and procedures. During climb out through 23,000 ft. we hit a cloud layer and per the OAT we turned on the engine anti ice. After turned off a couple minutes later we got a right engine fire light. As PIC I performed the immediate action items. The light remained on and per procedures I activated the Engine Fire Bottle. The light went out momentarily and by then we had shut down the affected right engine per the checklist. At this point we had [requested priority handling] and headed back for ZZZ. The fire light came back on and we decided to expel the second Fire Bottle. The light remained on so I initiated a rapid descent to influence air flow to extinguish the fire. We proceeded to ZZZ and the fire light extinguished and was intermittently coming on and off. We followed the Engine Fire Checklist and One Engine Inoperative Approach and Landing Checklist. We discussed Landing and Evacuation Procedures before landing and decided not to use speed brakes or thrust reversers on landing. We landed and stopped with approximately 1000 ft. of runway left and evacuated on the runway to ensure the safety of both crew members as we were the only two onboard. I spoke to ATC afterwards and they did not need anything from us.

## Synopsis

C560 Captain reported a right hand engine fire warning, causing an in flight shut down and an air turn back to a precautionary landing.

## Time / Day

Date : 202109

Local Time Of Day : 1201-1800

## Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.MSL.Single Value : 10000

## Environment

Flight Conditions : IMC

Weather Elements / Visibility : Turbulence

## Aircraft

Reference : X

ATC / Advisory.TRACON : ZZZ1

Aircraft Operator : Air Carrier

Make Model Name : A319

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Descent

Route In Use : Vectors

Airspace.Class B : ZZZ

## Component

Aircraft Component : Rudder Trim System

Aircraft Reference : X

Problem : Malfunctioning

## Person : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : 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 : 226

Experience.Flight Crew.Last 90 Days : 125

Experience.Flight Crew.Type : 226

ASRS Report Number.Accession Number : 1843128

Human Factors : Communication Breakdown

Human Factors : Situational Awareness

Human Factors : Workload

Human Factors : Distraction

Communication Breakdown.Party1 : Flight Crew  
Communication Breakdown.Party2 : ATC

## Person : 2

Location Of Person.Aircraft : X  
Location In Aircraft : Flight Deck  
Reporter Organization : Air Carrier  
Function.Flight Crew : First Officer  
Function.Flight Crew : Pilot Not Flying  
Qualification.Flight Crew : Multiengine  
Qualification.Flight Crew : Air Transport Pilot (ATP)  
Qualification.Flight Crew : Instrument  
Experience.Flight Crew.Total : 93  
Experience.Flight Crew.Last 90 Days : 65  
Experience.Flight Crew.Type : 93  
ASRS Report Number.Accession Number : 1843131  
Human Factors : Situational Awareness  
Human Factors : Distraction  
Human Factors : Workload

## Events

Anomaly.Aircraft Equipment Problem : Less Severe  
Anomaly.Deviation - Altitude : Excursion From Assigned Altitude  
Anomaly.Deviation - Speed : All Types  
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy  
Anomaly.Inflight Event / Encounter : Weather / Turbulence  
Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control  
Detector.Person : Flight Crew  
When Detected : In-flight  
Result.Flight Crew : Requested ATC Assistance / Clarification  
Result.Flight Crew : Regained Aircraft Control  
Result.Flight Crew : Became Reoriented  
Result.Air Traffic Control : Issued New Clearance

## Assessments

Contributing Factors / Situations : Weather  
Primary Problem : Weather

## Narrative: 1

Aircraft X experienced an upset aircraft state as a result of severe turbulence encountered on approach to ZZZ Runway XXR. The aircraft pitched to approximately 20 degrees nose up and 10 to 15 degrees left bank, disengaging the autopilot and causing the autothrust to increase power toward max. The airspeed decayed from 250 KIAS to 220 KIAS as the aircraft climbed from 10,000 ft. to 10,900 ft. before upset recovery procedures returned it to stable flight at 10,000 ft. and 250 KIAS. There were no injuries as passengers and flight attendants were seated early in anticipation of turbulence. There was no aircraft damage. Aircraft X made an uneventful landing on Runway XXR. The severe turbulence encounter was reported to Air Traffic Control and the Company. A full debrief was conducted with Flight Operations. Prior to descending into ZZZ, the First Officer (FO) and I discussed concerns about thunderstorms and convective activity in the terminal area. We had plenty of gas and I noted that ZZZ1 weather was excellent. I briefed the flight attendants to be seated approximately 20 minutes before touchdown. I then confirmed that they were

seated. I made a PA to the passengers that I expected very bumpy conditions and I emphasized the need for them to obey the Fasten Seat Belt sign. The FO and I briefed windshear precautions, indications, and procedures while inbound to ZZZZ for the ZZZZZ [arrival]. We did not re-brief the Upset Recovery procedures as they had been briefed prior to departure. (In retrospect, I think this could be good to review when windshear concerns are expressed as the windshear could result in an upset.) We were initially cleared on the ZZZZZ arrival. We loaded the Runway XXL ILS approach. Shortly into the descent, we had an AUTOFLT RUD TRIM 1 FAULT ECAM. I wrote it up as we were descending. Shortly after that, ATC vectored us off the arrival. ATC did not tell us what we should expect, but I heard several aircraft ahead of us receiving clearances to ZZZZZ1 for what I assumed would be the remainder of the ZZZZZ arrival. Radio communication congestion was significant. I sensed ATC was struggling to manage the number of arrivals from the north. I did not hear anyone receiving holding clearances. Holding might have alleviated the density of traffic and eased the friction for ATC. Eventually, we were told to do a 360 degree turn. Out of the turn, we were cleared to descend to 10,000 ft and given a heading of 190deg. I had heard another aircraft given a vector toward the ZZZZZ2 intersection, so I put it on the fix page for situational awareness. At that time, I was watching the radar which showed a cell next to the ZZZZZ2 intersection and another cell to the southwest. The two aircraft ahead of us were vectored through that gap. A 777 was behind us. At that time, we still did not know what arrival or approach clearance to expect. As we passed through the gap between the two cells, ATC said to advise when we could take a turn direct to ZZZZZ3. We did not have ZZZZZ3 loaded into the FMC. The FO did not know what ZZZZZ3 was. I asked him to load it and I spelled it out. (We still had Runway XXL loaded.) As we tried to get ZZZZZ3 loaded, along with the remainder of the ILS XXR approach, while still in the gap between the two cells, we experienced the severe turbulence and upset. After recovering the aircraft, I gave direction to the FO to load DIRECT ZZZZZ3 and I spelled it again. He did so, and we turned direct to the fix. He then connected the rest of the approach and it was flown uneventfully. As far as the execution of the Upset Recovery procedure, I did not comply with all the procedures. I also did not verbalize the steps and I did not silence the autopilot aural which resulted from the disconnect for quite some time. I had trouble focusing on the instruments and the "Startle Effect" was significant.

## Narrative: 2

Descending into ZZZ on the ZZZZZ arrival, we were taken off the arrival. I am assuming it was because of the convective weather in the area. We had flown in from the north and were being vectored west away from ZZZ. It seemed ATC was overwhelmed with all of the aircraft and bad weather in the area. Because we knew there was adverse weather around the airport the Captain sat the passengers and flight attendants well in advance. At one point while being vectored west we were told to fly multiple different headings which eventually made us complete a giant 360 degree turn. At the end of the turn I noticed that ATC was vectoring aircraft towards ZZZZZ2 intersection which seemed like ATC had found a gap they were funneling aircraft through. I pulled up ZZZZZ2 intersection on the fix page so we could see where it was in relation to our position on the nav display. ATC gave us a heading of 190 that was towards ZZZZZ2 intersection. At this point ATC did not tell us which runway or routing to expect. While flying on a heading of 190 and 250 kts. at 10,000 ft. we flew into a cloud and at that point we experienced an upset event of severe turbulence. The aircraft gained about 900 ft., dropped 30 kts., banked 10-15 degrees and disengaged the autopilot. The Captain was flying and immediately returned us to straight and level flight. The Captain reported the incident to ATC and I checked in with the Flight Attendants and no injuries occurred in the cabin. After the event ATC told us to go to ZZZZZ3 intersection and to expect Runway XXR. We landed the airplane and contacted the company about the event.



## Synopsis

Flight Crew reported severe turbulence caused a temporary loss of aircraft control.

## Time / Day

Date : 202108

Local Time Of Day : 1201-1800

## Place

Relative Position.Angle.Radial : 001

Relative Position.Distance.Nautical Miles : 38

Altitude.AGL.Single Value : 450

## Environment

Flight Conditions : VMC

Weather Elements / Visibility : Turbulence

Weather Elements / Visibility : Windshear

Weather Elements / Visibility.Visibility : 7

Ceiling.Single Value : 2400

## Aircraft

Reference : X

Aircraft Operator : Personal

Make Model Name : Cessna 180 Skywagon

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Flight Plan : VFR

Mission : Personal

Flight Phase : Takeoff / Launch

Airspace.Class E : ZZZ

## Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Personal

Function.Flight Crew : Single Pilot

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

Experience.Flight Crew.Total : 16500

Experience.Flight Crew.Last 90 Days : 250

Experience.Flight Crew.Type : 1000

ASRS Report Number.Accession Number : 1842805

Human Factors : Workload

Human Factors : Distraction

## Events

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

Anomaly.Ground Event / Encounter : Loss Of Aircraft Control

Anomaly.Ground Event / Encounter : Ground Strike - Aircraft

Anomaly.Inflight Event / Encounter : Weather / Turbulence

Detector.Person : Flight Crew

When Detected : In-flight

Result.General : Flight Cancelled / Delayed  
Result.Flight Crew : Landed in Emergency Condition  
Result.Aircraft : Aircraft Damaged

## Assessments

Contributing Factors / Situations : Weather  
Primary Problem : Weather

## Narrative: 1

While taking off from a 900 foot gravel bar a wind shear/ down draft was encountered. The event forced the aircraft back down and damaged the aircraft.

## Synopsis

A pilot departing from a "900 foot gravel bar" reported a wind shear encounter forced the aircraft back down resulting in damage to the aircraft.

## Time / Day

Date : 202109

Local Time Of Day : 1201-1800

## Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Relative Position.Angle.Radial : 250

Relative Position.Distance.Nautical Miles : 2

Altitude.AGL.Single Value : 300

## Environment

Flight Conditions : Marginal

Weather Elements / Visibility : Fog

Light : Dusk

Ceiling.Single Value : 1000

## Aircraft

Reference : X

ATC / Advisory.Center : ZZZ

Aircraft Operator : FBO

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 : Cruise

Airspace.Class E : ZZZ

## Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Personal

Function.Flight Crew : Pilot Flying

Function.Flight Crew : Instructor

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Flight Instructor

Qualification.Flight Crew : Commercial

Experience.Flight Crew.Total : 635

Experience.Flight Crew.Last 90 Days : 85

Experience.Flight Crew.Type : 300

ASRS Report Number.Accession Number : 1842294

Human Factors : Other / Unknown

Human Factors : Distraction

## Events

Anomaly.Airspace Violation : All Types

Anomaly.Deviation / Discrepancy - Procedural : FAR

Anomaly.Deviation / Discrepancy - Procedural : Clearance

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

Anomaly.Inflight Event / Encounter : Weather / Turbulence

Anomaly.Inflight Event / Encounter : CFTT / CFIT

Detector.Person : Air Traffic Control

Detector.Person : Flight Crew

When Detected : In-flight

Result.Air Traffic Control : Issued Advisory / Alert

## Assessments

Contributing Factors / Situations : Human Factors

Primary Problem : Human Factors

## Narrative: 1

Low ceilings forced us to make a low pass over [the] pier. Wide left turn put us over the land. Did not want to make a right turn due to ZZZ airspace at the surface. Resulted in flying low over the ground, which Tower verbally asked me to correct, and I complied immediately.

## Synopsis

C172 flight instructor reported low flight over populated landmark due to low ceiling and to avoid a Class B airspace incursion. ATC requested pilot to correct.

## Time / Day

Date : 202109

Local Time Of Day : 1201-1800

## Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.AGL.Single Value : 0

## Environment

Weather Elements / Visibility : Windshear

## Aircraft

Reference : X

ATC / Advisory.Tower : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : A321

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Takeoff / Launch

## Person : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Air Transport Pilot (ATP)

ASRS Report Number.Accession Number : 1841622

Human Factors : Time Pressure

Human Factors : Workload

Human Factors : Human-Machine Interface

Human Factors : Other / Unknown

## Person : 2

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : First Officer

Function.Flight Crew : Pilot Not Flying

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Air Transport Pilot (ATP)

ASRS Report Number.Accession Number : 1841507

Human Factors : Time Pressure

Human Factors : Other / Unknown  
Human Factors : Human-Machine Interface  
Human Factors : Workload

## Events

Anomaly.Deviation - Track / Heading : All Types  
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy  
Anomaly.Ground Event / Encounter : Weather / Turbulence  
Anomaly.Ground Event / Encounter : Loss Of Aircraft Control  
Detector.Person : Flight Crew  
When Detected : In-flight  
Result.Flight Crew : Overcame Equipment Problem

## Assessments

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

## Narrative: 1

Winds 140/15 gust 25, Tower broadcast landing aircraft report +/-15 kts on final. Regional jet taking off ahead of us showed large downwind drift after rotation. Prior to takeoff I briefed TOGA on takeoff roll if necessary. We tracked center-line until 110 kts then the aircraft weather-vaned 30 degrees to the left (gusts exceeded rudder control). If we rejected we would have departed the runway. I applied full right rudder, right aileron and selected TOGA with the aircraft correcting and the left main gear on the left runway edge striping. Rather than risk further drift to the left I elected to rotate 15-20 kts prior to VR. After becoming airborne the right wing dipped 7-10 degrees, I neutralized aileron and rudder, called for gear up and continued the climbout. We immediately reported the windshear (horizontal) and I believe we were the last takeoff out of ZZZ. We reported the incident to Dispatch and he told us all the airports in the area were ground stopped. I believe we encountered a sudden horizontal windshear, with resulting side gusts, exceeding the aircraft capability to maintain heading at a critical phase of takeoff. I believe a runway change to [Runway] XXR would have aligned us with the wind and prevented this incident. ATC should not hesitate to change runways so that aircraft are taking off into the wind. Especially when the winds are strong and gusty crosswinds.

## Narrative: 2

I was the PM (Pilot Monitoring) and we were cleared into position and hold for Runway XYR full length in ZZZ. The winds were gusty but nothing beyond our limits. ATIS reported 140/17G27 with LLWS in the area. In addition Tower had relayed to landing aircraft for XXL reports of +15 kts. on final near 500 ft. As we entered the runway the CA (Captain) PF (Pilot Flying) mentioned, "We have TOGA available if we need it." There were no reports by previous aircraft, a company 777 and an RJ, of any airspeed gain or loss on takeoff and there were no LLWS warnings issued. We were cleared for takeoff and I believe Tower reported wind gusting to 24, still well below our limits. The CA PF added power normally and we began the takeoff roll. The engines came up normally. The airspeed moved rather quickly beyond 80 to 90 kts as the engines stabilized at FLEX and I called 90. As I looked up from the engines and the airspeed the aircraft began to move off centerline slightly then began a more rapid turn to the left to the point of the right mains being to the left of the centerline. At this point I called out to the CA PF, "Centerline, centerline, centerline." and we continued a drift to the left. I looked down to begin stepping on the rudder with the CA PF to maintain directional control and it appeared full

right rudder was applied. I then looked up and was about to call reject when the CA PF began to pitch up as we slowly regained directional control. Our airspeed was not yet at V1, probably 10 kts., perhaps a little more below. We were approximately 3000 ft down the runway I believe but I'm not certain. At this point a reject was out of the question as we were airborne and turning back towards the centerline. The CA PF held a very slight pitch up and allowed the aircraft to slowly accelerate and fly out of the windshear. As we began a slow climb, speed was still low. The CA PF did an excellent job keeping the airplane from settling back to the ground without excessive pitch and at a very slow airspeed. Somewhere in this event the CA PF went to TOGA. I have no idea when but I believe it was shortly before we became airborne and turned back toward the centerline. The aircraft continued a climb and we climbed out with a normal takeoff out of about 200 ft. There was never a call of windshear by the aircraft or a noticeable change of the airspeed. I was 100% looking outside after 90 kts. to assess where we were and what I could do to help the CA PF control the aircraft. From the time of calling centerline to the time of getting airborne could not have been more than 3 seconds. It all happened incredibly fast. It was very smooth and not a single bump climbing to 800 ft. or so. The entire scenario lasted maybe 10 seconds but it felt like 20 minutes. I'm still not 100% certain what caused the drift to the left. The turn matched with the strong crosswinds. I'm fairly certain they were the cause but it could not have been the same wind speed as what the ATIS reported and what Tower stated. It was as if we entered an area with a significant wind increase that temporarily approached our crosswind limitations. At the slower airspeed and less rudder authority the capabilities of the aircraft may have been briefly exceeded until we accelerated and got more airflow over the rudder. I've taken off near crosswind limits before and I've never had this type of event. Not even close. I'm not sure anything could have been done differently. The CA mentioned the availability of TOGA due to the winds which was crucial to the end result I believe. My call of centerline brought the CA into action to which he stated was a good thing. We were both very surprised by the rapid turn, like the startle effect almost. The only thing I could have done was call reject sooner but it was not necessary until we made the rapid turn to the left and subsequently became airborne.

## Synopsis

A321 flight crew reported a horizontal windshear on takeoff roll. Flight crew recommended using a runway more aligned with wind conditions.



## Time / Day

Date : 202109

Local Time Of Day : 1201-1800

## Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.MSL.Single Value : 16000

## Environment

Flight Conditions : VMC

Weather Elements / Visibility : Rain

Light : Daylight

## Aircraft

Reference : X

ATC / Advisory.Tower : ZZZ

ATC / Advisory.TRACON : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : A319

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Climb

Flight Phase : Initial Climb

Route In Use : Vectors

Airspace.Class B : ZZZ

## Component

Aircraft Component : Emergency Exit

Aircraft Reference : X

Problem : Malfunctioning

Problem : Improperly Operated

## Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Not Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

ASRS Report Number.Accession Number : 1841505

Human Factors : Troubleshooting

Human Factors : Distraction

## Events

Anomaly.Aircraft Equipment Problem : Less Severe  
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy  
Anomaly.Deviation / Discrepancy - Procedural : Maintenance  
Anomaly.Deviation / Discrepancy - Procedural : FAR  
Anomaly.Inflight Event / Encounter : Weather / Turbulence  
Detector.Person : Flight Crew  
Were Passengers Involved In Event : N  
When Detected : In-flight  
Result.General : Maintenance Action  
Result.General : Flight Cancelled / Delayed  
Result.Flight Crew : Landed As Precaution  
Result.Flight Crew : Requested ATC Assistance / Clarification  
Result.Flight Crew : Returned To Departure Airport  
Result.Air Traffic Control : Provided Assistance

## Assessments

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

## Narrative: 1

Our aircraft came to the gate directly from the maintenance hangar. We were given [Runway] XR for take off. I was the Pilot Monitoring (PM). Due to wind shear alerts on the approach, and WX moving toward the field, we elected to do a TOGA take off. We were on the ZZZZZ Departure, but were given a heading immediately after takeoff to avoid a cell. Approximately 5-7 min after takeoff, and cleared to climb to 16k feet, we got a "DOOR L EMER EXIT" EICAS message. The First Officer (FO) declared it was his aircraft and we identified the need to level off at 10k. I notified Departure, and they gave us clearance to stop climb at 10k. I told him we were troubleshooting and we would need to return to ZZZ. We requested priority. The FO took over the radio, and I was trying to determine the problem and keep the passengers and flight attendants apprised of the situation. I briefed the flight attendants a couple of times on ALL, and made a PA to the passengers. The number 1 Flight Attendant told me that a cover for that over wing emergency exit had fallen off. I notified the company through ACARS that we were returning to ZZZ and they acknowledged. Meanwhile, the weather had hit the airport, and they asked us if we wanted to land with a tailwind, or if we wanted to wait for the field to be turned around. (Landing west now) We told them we would prefer to land with a headwind. They told us to expect the RNAV to [Runway] XX because the ILS was not up yet. We accomplished the descent checklist and set up for the RNAV. Approach later told the plane ahead of us that the ILS was working now, so we set up for that while being vectored. The weather was not optimal - there was a strong rain column over the field, about 1/2 way down Runway XX, but we had a good visual on the field. We discussed the need for a hard go-around if needed. After an outstanding landing from the right seat, we were met by possibly every priority vehicle at ZZZ as we taxied clear of [Runway] XX. They checked that we did not need any further assistance, and the on scene commander followed us all the way to the recovery gate. After evaluation by maintenance, we were told that the cover that had fallen off is held in place by a rather flimsy metal clip. There is a magnet on the cover, and when the cover is removed, it causes the alarm that we received. He said that the covers are routinely removed when the plane is in the hanger, and that they can sometimes get loose. They eventually adjusted the clips for both over wing exits and returned the aircraft to service. We flew it to ZZZ1 and back with no further issues. I was told that, had the

handle been pulled on the emergency exit, due to the plug nature of the exit, the hatch would most likely not have moved. The slide, however, would have deployed. This would have caused major controllability issues. Additionally, after discussing it with safety, I was told that this is not a common problem, but it is one that could use greater awareness for pilots. The metal clip holding the emergency exit cover in place was either loose or had not been seated properly. Had the cover fallen off at altitude, the EICAS would have asked for an emergency descent to 10k, which would, obviously be very dramatic. Our air interrupt and any further similar events could be avoided if the pilots were trained to replace the cover before as step one in trouble shooting.

## Synopsis

Captain reported an Air Turn Back caused by an EICAS message DOOR L EMER EXIT on climb out.

## Time / Day

Date : 202109

Local Time Of Day : 1801-2400

## Place

Locale Reference.ATC Facility : ZOB.ARTCC

State Reference : OH

## Environment

Flight Conditions : Mixed

Weather Elements / Visibility : Turbulence

Weather Elements / Visibility.Visibility : 10

Light : Daylight

## Aircraft

Reference : X

Aircraft Operator : Air Carrier

Make Model Name : Balloon

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Flight Plan : VFR

Mission : Passenger

Flight Phase : Cruise

Airspace.Class E : ZZZ

## Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Contracted Service

Function.Flight Crew : Single Pilot

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Commercial

Experience.Flight Crew.Total : 826

Experience.Flight Crew.Last 90 Days : 24

Experience.Flight Crew.Type : 826

ASRS Report Number.Accession Number : 1841181

Human Factors : Confusion

Human Factors : Situational Awareness

Human Factors : Time Pressure

Human Factors : Workload

Human Factors : Distraction

## Events

Anomaly.Ground Event / Encounter : Loss Of Aircraft Control

Anomaly.Inflight Event / Encounter : Weather / Turbulence

Detector.Person : Flight Crew

When Detected : In-flight

Result.Flight Crew : Regained Aircraft Control

Result.Flight Crew : Became Reoriented

## Assessments

Contributing Factors / Situations : Human Factors

Contributing Factors / Situations : Weather

Primary Problem : Weather

## Narrative: 1

Aircraft X VFR Flight Operations Sight Seeing Hot Air Balloon. Approximately 15 minutes into the flight, I descended near the [the] River upstream of the Falls at [the] State Park. A low-level inversion over the river caused the balloon to rise slightly. Shortly after a wind rotor pushed the balloon down over the edge of the falls and back into the cascading water. The mechanical turbulence of this wind was stronger than I have ever experienced. I operated the burners to arrest the descent, gain altitude and ascend out of the gorge. The balloon landed safely 2 miles from the waterfalls. There were no injuries to passengers or pilot and no damage to the aircraft. Since this incident I have spent days reflecting on what occurred, the seriousness of this event, and what I can do differently in the future so that this never happens again. I've reached out to my colleagues for peer pilot review to process this self-critique. I've reviewed the FAA Balloon Flying Handbook. My research and reflection have led me to develop a corrective procedure and make immediate changes to my flight operations. Mechanical wind turbulence- resulting from wind flowing over irregular terrain or obstructions. When the air near the surface of the Earth flows over obstructions, such as irregular terrain, (bluffs, hills, mountains) and buildings, the normal horizontal wind flow is disturbed. As a result, it is transformed into eddies or other irregular air movements. The strength and magnitude of mechanical turbulence depends on: the speed of the wind, the nature of the obstruction, the stability of the air, and the angle at which the wind moves over the obstacle. As the air flows down the leeward side of the mountain, the air follows the contour of the terrain and is increasingly turbulent. This tends to push an aircraft into the side of a mountain. The stronger the wind, the greater the downward pressure and turbulence become. Due to the effect terrain has on the wind in valleys or canyons, downdrafts may be severe. I flew the balloon too close to an irregular terrain feature, canyon, river and waterfalls where Mechanical Wind Turbulence can be present and at varying levels of severity. I will no longer conduct low level waterfall passages as part of my flight operations. Instead I will approach them at no lower than half the height of the irregular terrain similar to flying over a mountain in a balloon. For example: The Falls in [the] State Park is 100 ft. tall. My flight procedure will be to fly no lower than 50 ft. above the river and falls below. This will insure safe altitude from the effects of mechanical wind turbulence on a hot air balloon.

## Synopsis

A Hot Air Balloon pilot reported unexpected wind currents forced the balloon to descend into a waterfall and river but they were able to regain control and climb away to a safe landing area.

## Time / Day

Date : 202109

Local Time Of Day : 1801-2400

## Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Relative Position.Angle.Radial : 263

Relative Position.Distance.Nautical Miles : 73.2

Altitude.MSL.Single Value : 14000

## Environment

Flight Conditions : VMC

Weather Elements / Visibility.Visibility : 25

Light : Daylight

Ceiling.Single Value : 25000

## Aircraft

Reference : X

ATC / Advisory.Center : ZZZ4

Aircraft Operator : Personal

Make Model Name : Small Aircraft, Low Wing, 1 Eng, Fixed Gear

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Personal

Flight Phase : Cruise

Route In Use : Direct

Airspace.Class E : ZZZ4

## Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Personal

Function.Flight Crew : Single Pilot

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Private

Qualification.Flight Crew : Instrument

Experience.Air Traffic Control.Radar : 4

Experience.Air Traffic Control.Military : 4

Experience.Flight Crew.Total : 437

Experience.Flight Crew.Last 90 Days : 86

Experience.Flight Crew.Type : 86

ASRS Report Number.Accession Number : 1840707

Human Factors : Distraction

Human Factors : Situational Awareness

Human Factors : Workload

Human Factors : Human-Machine Interface

## Events

Anomaly.Deviation - Track / Heading : All Types  
Anomaly.Deviation / Discrepancy - Procedural : Clearance  
Anomaly.Inflight Event / Encounter : Weather / Turbulence  
Anomaly.Inflight Event / Encounter : CFTT / CFIT  
Detector.Person : Air Traffic Control  
When Detected : In-flight  
Result.Flight Crew : Requested ATC Assistance / Clarification  
Result.Flight Crew : Diverted  
Result.Air Traffic Control : Issued New Clearance  
Result.Air Traffic Control : Provided Assistance

## Assessments

Contributing Factors / Situations : Airspace Structure  
Contributing Factors / Situations : Human Factors  
Contributing Factors / Situations : Software and Automation  
Contributing Factors / Situations : Weather  
Contributing Factors / Situations : Procedure  
Primary Problem : Airspace Structure

## Narrative: 1

At approximately XB:45 PM Mountain daylight time I departed ZZZ on an IFR flight plan to ZZZ1. I had an estimated 14 gallons of fuel upon arrival earlier in the day and I instructed the FBO at ZZZ2 to add 50 gallons total, 25 per side to the tanks giving me an estimated fuel load of 64 gallons. I set up the avionics in my airplane showing that I had 60 gallons of fuel, which is what my flight plans said I needed including legal minimums leaving the four extra gallons as my "Just in case" which was as I was taught. I had previously created a flight plan (2 weeks prior to the actual date of the flight) in ForeFlight that I updated almost daily including the day prior to the flight and again at approximately XA:00 PM that afternoon (on the day of the flight, approximately 30 minutes prior to departure) using the winds as of XA:00 Zulu and the TAF as of XA:25 Zulu. I have saved all of these documents for the record and have copies of the original filings and the original NAV logs and terminal air forecast data. Winds were estimated to be average 23 knot headwind at 260 and the NAV log showed that the block fuel required was 60 gallons including a 14 gallon legal reserve for the flight. Since I landed with 14-15 gallons in the tanks and added 50 gallons total, 25 per side I felt confident that I had a sufficient amount of fuel for the flight based on the current and forecast winds, the aircraft performance and my ForeFlight briefing and NAV log and should land at ZZZ1 with 14 to 18 gallons of fuel. Upon departure from ZZZ2, ZZZ3 Approach vectored me to a 250 heading and left us on that heading for vectors around a military operating area. ZZZ3 Approach handed us off to ZZZ4 Center which kept us on the 250 heading for quite some time. In checking my direct to function on ForeFlight (which I had operational on my knee board) I could have went direct to ZZZ5 VOR and kept well south of the military operating area. Wanting to get back on course, I made a radio call to ZZZ4 Center asking if we could go direct at this point to the ZZZ5 VOR. ZZZ4 Center did not clear us direct ZZZ5. They then cleared us to ZZZ6 VOR. Then direct ZZZ5 then ZZZ2 AT 14,000. The flight proceeded normally except that winds were showing to be 35 to 45 knots direct headwind. The fuel totalizer showed 17 to 18 gallons fuel over destination so I continued the flight keeping an eye on the fuel over destination. Conditions were VMC The entire flight. At approximately ZZZ7 VOR, the winds began to pick up dramatically and instruments start showing 45 to 50 knot direct headwind. At this point the fuel totalizer began to show 8 to 10 gallons fuel over destination. I activated the nearest function on my avionics to find an airport where I could deviate to, in order to take

on more fuel and then finish the flight. The nearest function showed that ZZZ8 had 24 hour self-service fuel and was approximately 30 miles to my south. At this point I had over 20 gallons of fuel good for over an hours worth of flight time and ZZZ8 was a 10 to 15 minute diversion and decided to divert to ZZZ8 for fuel. I decided that if the winds did not die down and the fuel totalizer returned to a minimum of 14 gallons fuel over destination within the next 10 minutes that I would divert to ZZZ8 and take on fuel. The winds persisted and I advised ZZZ4 Center that I would need to divert to ZZZ8 for fuel due to the wind being much stronger than anticipated or forecasted and that I did not want to be minimum or emergency fuel arriving into the ZZZ1 area. The center controller asked me if I wished to declare an emergency. I said no that I had sufficient fuel to reach ZZZ8 which was approximately 30 miles away and not into a direct headwind and that I plan to land at ZZZ8 take on fuel and resume the flight. The controller cleared me to ZZZ8, I and I had a bearing up on my nearest screen and it showed a bearing of 218 to ZZZ8 so I switched from NAV on the auto pilot to heading and dialed in 220 and started toward ZZZ8. The controller asked me what approach I wanted at ZZZ8 and I looked on ForeFlight and noticed the ZZZ8 had a GPS approach to runway XX. Add this point I put what I thought was the identifier for ZZZ8 in my avionics as "ZZZ9" which is an airport in [completely different state]. I selected NAV on the auto pilot and the airplane made a turn to the left from a hearing of 220 approximately 090 turning the aircraft back toward a mountain range. I immediately saw that I was turning away from the airport but at this point did not understand why as at this moment. I didn't realize that I had put the airport identifier in the avionics incorrectly as ZZZ9 instead of ZZZ8. I attempted to re-enter the airport identifier as ZZ8 again and the avionics again tried to guide me toward the wrong airport. At this point I did not realize that I was entering the wrong airport identifier but I could see ZZZ8 on my moving map and knew that I was navigating away from ZZZ8. Although I was in VMC conditions it took me approximately one to two minutes to realize my error and to reprogram the avionics to the correct airport identifier and locate the approach charts for ZZZ8 for the GPS runway XX. During this time the controller told me that it appeared I was navigating away from ZZZ8 and the airport off to my right was not the ZZZ8 airport and gave me a heading to ZZZ8 and the controller issued me a low altitude alert. I started a right turn toward ZZZ8 and attempted to load the approach to ZZZ8 but my avionics had ZZZ1 as my final destination and wanted to load approaches to ZZZ1 and not ZZZ8. I deleted the remainder of my flight plan out of my avionics except for ZZZ8 located the approach and flew the GPS to ZZZ8 and landed normally without incident. I found the frequency on the approach plate for the lights at ZZZ8 and using the pilot controlled lighting at ZZZ8, I turned the lights on positively identified the runway and landed safely without incident at ZZZ8. I told the controller at ZZZ4 Center that I had the airport in sight (identified the airport by turning on the runway lights) and was established on the approach and would land normally and take on fuel. The controller issued me a possible pilot deviation notice and asked me to call when I landed. I landed the airplane and took on 40 gallons of fuel and called ZZZ4 Center on the number provided. The person who answered the phone was polite asked me my name and then asked me "Hey what happened here?" I related the basic details of the events above (although not in the detail provided here). They thanked me for calling and asked me for my name address and pilot certificate number all of which I gave to them. They told me thank you and if anyone else had any questions they would be in contact with me. I continued the flight to ZZZ1 by getting an IFR clearance from Center out of ZZZ8 to ZZZ5 direct ZZZ1 was cleared for an ILS approach to Runway XY Via a 15 DME arc and landed normally at ZZZ1 at approximately XG: 50 PM MDT. I've had a lot of time to think about this at length. As the avionics attempted to turn the airplane toward ZZZ9 I immediately realized that I was going in the wrong direction but for a period of about 1 to 2 minutes I didn't understand why the airplane was attempting to take me an airport in [different state]. I knew it was taking me in the wrong direction but I didn't understand why, initially. As I was turning the



airplane back toward ZZZ8 as I could see it on my map I was trying to figure out why the avionics wasn't taking me there. Then I realized that I had put in the wrong airport identifier, by one digit. When I fixed that I tried to load the approach for ZZZ8 edit brought up the ZZZ1 approach charts. That took me a few seconds to realize that the avionics was thinking I wanted at my destination was ZZZ1 and I'm now landing at ZZZ8. I deleted the rest of my flight plan leaving ZZZ8 as my destination located the approach chart activated the approach to ZZZ8, I and landed there. I did all of this during a right turn and flying back toward ZZZ8 and lining up to the runway. In retrospect I realize that the controller at ZZZ4 Center had no idea why I was turning in the wrong direction except that I was turning toward high elevation terrain. The controller was doing his job in notifying me that I was headed the wrong direction and giving me Low altitude alert. However I was also doing my job in Aviating first, navigating second and communicating third. At this point the controller was trying to correct my direction of flight and I was flying the airplane in VMC conditions while trying to correct my avionics to direct me to ZZZ8. In my estimation of what happened, both the controller and I were doing our jobs to the best of our abilities. I made the unfortunate mistake of entering the fix for ZZZ8 airport in my avionics incorrectly which took me in the wrong direction however I realized the error immediately and corrected the error promptly and remained in VMC conditions throughout. I believe that my decision making was sound, correct and timely to divert to ZZZ8 to take on additional fuel and I also believe that my flight planning utilizing ForeFlight the terminal air forecast and predicted winds were all carefully studied and factored into the decision on how much fuel to take on for the flight to ZZZ1 considering weight and balance. If I had this all to do over again I would probably have continued my flight toward ZZZ1 for an additional 5 minutes or so and reprogrammed ForeFlight on my iPad, reviewed the route and approach options, and then once I had it where I wanted it, requested it from center and then once approved, send it from my tablet to the panel and activated the new route from the panel. The day following this event I flew from ZZZ1 to ZZZ10 and then from ZZZ10 TO ZZZ11. On departure from ZZZ1 I was assigned the ZZZZ4 departure ZZZ12 transition from runway XY @ZZZ1. As I was preparing for taxiing out ZZZ1 switched runways from XY to YX. I was still on the ramp and although it is the same SID procedure it has different routing and I had to take out the runway XY routing and replace it with the YX routing. The controller acted a little aggravated as he asked me if I was ready for taxi but I told him I needed a minute to update my SID routing. What I didn't want to do is being taxiing out "heads down" reprogramming my route. Why not do it while stopped and in the ramp? About a minute later I advised ground that I had the route reprogrammed and was ready for taxi. They taxied me to Runway YX and I did it with heads up and eyes out. Minutes later they cleared me for takeoff, and canceled the SID routing while issuing me the takeoff clearance and put me on a departure heading. No problem. ZZZ13 Approach directed me off heading to an interim fix on the SID which I navigated to and executed without problem. But ATC is busy and used to giving immediate instructions to be complied with immediately, and moving on to the next guy. But now that I am on the other side of the mike, I now understand what it takes to fly the airplane, take into consideration the concerns of non-pilot passengers and reprogram avionics on the fly due to changing conditions. The day following this incident I flew 1,365 NM in two legs and practiced during the 3 hour en-route phase, practiced my reaction to this incident by selecting a nearest to airport and then entering the fix into the avionics and walking through the steps to delete the rest of the flight plan and load a deviation airport approach. I also use ForeFlight as my back up NAV source and practiced programming a divert flight plan an exporting it to the panel. During the leg from KZZZ10 to ZZZ11 I got to put it to the test due to weather. My route taking me from SZZZ14 TO ZZZ11 was through a line of severe thunderstorms. I was able to see this developing at my destination an hour ahead of arriving in the area and I used ForeFlight and ADSB weather to program a route to [route] to go west and then south of the weather. With the route

programmed in ForeFlight, and reviewed for accuracy, I called ZZZ15 ARTCC told them why I needed to reroute and suggested this route and they cleared me as requested. I exported the route from ForeFlight on my knee pad to the panel and activated the route on the panel. Not that you (or me) can't do that on the panel but if you have time, (which I did on the incident described here) but this allowed me to program a route on the fly, review it for errors and then export it. This procedure did not effect the airplanes avionics and allowed me to plan, review and execute, which was what I wish I would have done the previous day.

## Synopsis

A single engine Pilot reported they entered the wrong destination into their avionics resulting in turning the wrong direction and receiving a Low Altitude Alert from ATC. The reporter was diverting from their original clearance destination to refuel the aircraft.

## Time / Day

Date : 202109

Local Time Of Day : 1801-2400

## Place

Locale Reference.ATC Facility : ZZZ.Tower

State Reference : US

Altitude.AGL.Single Value : 200

## Environment

Flight Conditions : Mixed

Weather Elements / Visibility.Visibility : 25

Light : Dusk

Ceiling.Single Value : 14000

## Aircraft : 1

Reference : X

ATC / Advisory.Tower : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : B737-700

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Landing

Airspace.Class B : ZZZ

## Aircraft : 2

Reference : Y

ATC / Advisory.Tower : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : Any Unknown or Unlisted Aircraft Manufacturer

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Landing

Airspace.Class B : 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 : Multiengine

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Experience.Flight Crew.Last 90 Days : 102

Experience.Flight Crew.Type : 9000  
ASRS Report Number.Accession Number : 1840323  
Human Factors : Workload  
Human Factors : Time Pressure  
Human Factors : Distraction  
Human Factors : Other / Unknown

## 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 : Instrument  
Qualification.Flight Crew : Air Transport Pilot (ATP)  
Experience.Flight Crew.Last 90 Days : 190  
Experience.Flight Crew.Type : 4725  
ASRS Report Number.Accession Number : 1840338  
Human Factors : Time Pressure  
Human Factors : Other / Unknown  
Human Factors : Distraction  
Human Factors : Workload

## Events

Anomaly.Conflict : Airborne Conflict  
Anomaly.Deviation - Altitude : Excursion From Assigned Altitude  
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy  
Anomaly.Deviation / Discrepancy - Procedural : Clearance  
Anomaly.Inflight Event / Encounter : CFTT / CFIT  
Anomaly.Inflight Event / Encounter : Weather / Turbulence  
Anomaly.Inflight Event / Encounter : Unstabilized Approach  
Detector.Automation : Aircraft Terrain Warning  
Detector.Automation : Aircraft RA  
Detector.Automation : Aircraft Other Automation  
Detector.Person : Flight Crew  
When Detected : In-flight  
Result.Flight Crew : FLC complied w / Automation / Advisory  
Result.Flight Crew : Took Evasive Action  
Result.Flight Crew : Requested ATC Assistance / Clarification  
Result.Flight Crew : Overcame Equipment Problem  
Result.Flight Crew : Executed Go Around / Missed Approach  
Result.Flight Crew : Diverted  
Result.Air Traffic Control : Provided Assistance

## Assessments

Contributing Factors / Situations : Weather  
Primary Problem : Weather

## Narrative: 1

Approaching ZZZ on the ZZZZZ3 RNAV Arrival Runway XXR transition and while joining an approximate 20 mile final, ATC advised us of traffic joining the [Runway] XXL approach

course. Traffic was in sight and within a few moments we received an RA command of "Descend". The First Officer, who was the Pilot Flying, disengaged the automation and complied with the RA. I advised ATC of the conflict and we continued our approach for XXR with autopilot/autothrottle disengaged. While continuing the approach, we heard an aircraft executing a "Go-Around" on XXL due to windshear. The F/O (First Officer) and I communicated with one another to "Be ready" in case windshear was encountered. During the approach I observed unremarkable wind speeds 7-15 knots; however, winds varied from direction as descent continued. The aircraft was fully configured and on airspeed well before 1,000 ft., landing clearance was received and the Before Landing Checklist complete. At the 500 ft. call, the traffic that we were following to XXR, had landed and was just clearing the runway. Light unremarkable turbulence was encountered during the approach with little fluctuations in airspeed until approximately 200 ft. AGL. At that point I felt the aircraft sink and observed what seemed to be an instantaneous decrease in airspeed. "Pull Up" appeared on the PFD (Primary Flight Display) and then I called "Pull Up". The F/O appeared to have observed the same warning and was initiating the escape maneuver. I called "Windshear" and as pitch and power was applied, the aircraft performed as commanded. No change to configuration occurred until both the F/O and I agreed that the aircraft was no longer in jeopardy. A normal go-around procedure was then completed. ATC advised several aircraft (after our go-around) of "Microburst Alert! Loss of 40 knots on short final". ATC gave a frequency change to Departure Control, that neither the F/O nor I heard. After several minutes of distraction, ie. ACARS Dispatch for alternate, excessive radio traffic, communication with passengers, I contacted Tower and communication with Departure Control was attained. A divert plan was received from Dispatch; however, ATC advised that approaches and landings had resumed in ZZZ. Due to the lengthy delayed vectors, we determined that conditions had improved and enough fuel was on board, to attempt another approach and landing. A normal approach and landing was performed to Runway XXL in ZZZ. As a note, the F/O informed me of the two-tone aural alert and windshear warning. It's quite possible that when I said windshear it was due to what I saw on the PFD and or me repeating what was already said by the aircraft. The event happened so quickly I can't recall.

## Narrative: 2

We began our descent on the ZZZZZ 3 Arrival [Runway] XXR transition. As we approached the ZZZ terminal area ATC vectored us off the arrival with an intercept heading and cleared us for the visual approach to XXR. A descending RA ensued during LOC interception to XXR with the autopilot on. The conflict aircraft was in sight and I disconnected the automation and complied with the RA command. This lasted a few seconds and only descended a few 100 feet, whilst maintaining localizer centerline. Once the RA was clear we opted to continue the approach. As we were configuring on the visual approach to XXR we heard an aircraft transmitting to ATC that they were going around on XXL due to windshear. At that time we received no predictive windshear/or reactive windshear warnings and all indications in the flight deck seemed normal. In fact the aircraft we were following to XXR had not transmitted any adverse conditions as well. We continued fully configured by 1,000 ft. AGL to XXR. At approximately 150 ft. the aircraft felt as if it started to drop/fall and the Captain called "Windshear" and a "WINDSHEAR" warning followed. I performed the windshear escape maneuver. The threat only lasted what seemed like a few seconds and we were through the microburst. ATC then issued microburst warnings after our encounter. Once we were in the clear, we were vectored back to ZZZ for an approach to XXL. At that time the microburst was no longer a threat and three or four aircraft already landed XXL. We agreed that returning was the most viable option instead of diverting to ZZZ1. We landed with no further incident. It wasn't until we were getting vectored back to ZZZ that the Captain informed me that a PULL-UP was also received. During the event I did not hear or see a PULL-UP warning. I was so

focused on not hitting the ground and executing a WINDSHEAR escape maneuver. Before the event we discussed the possibility of a windshear encounter due to the other aircraft go-around. So when the Captain and aircraft called windshear, windshear was on the forefront of my mind and a WINDSHEAR escape maneuver was executed.

## Synopsis

Air Carrier flight crew reported a CFIT event due to a TCAS RA followed immediately by a wind shear warning during landing. Flight crew executed an evasive maneuver and sequenced for another approach.

## Time / Day

Date : 202109

Local Time Of Day : 1801-2400

## Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Relative Position.Angle.Radial : 150

Relative Position.Distance.Nautical Miles : 35

Altitude.MSL.Single Value : 6000

## Environment

Flight Conditions : IMC

Light : Night

Ceiling.Single Value : 500

## Aircraft

Reference : X

ATC / Advisory.Tower : ZZZ

Aircraft Operator : Personal

Make Model Name : Skyhawk 172/Cutlass 172

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Personal

Flight Phase : Descent

Route In Use : Vectors

Airspace.Class E : ZZZ

## Component

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

Aircraft Reference : X

Problem : Malfunctioning

## Person : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Personal

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Commercial

Qualification.Flight Crew : Flight Instructor

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Instrument

Experience.Flight Crew.Total : 1200

Experience.Flight Crew.Last 90 Days : 100

Experience.Flight Crew.Type : 500

ASRS Report Number.Accession Number : 1840261

Human Factors : Human-Machine Interface

Human Factors : Troubleshooting  
Human Factors : Confusion

## Person : 2

Location Of Person.Aircraft : X  
Location In Aircraft : Flight Deck  
Reporter Organization : Personal  
Function.Flight Crew : Pilot Not Flying  
Qualification.Flight Crew : Flight Instructor  
Qualification.Flight Crew : Multiengine  
Qualification.Flight Crew : Instrument  
Qualification.Flight Crew : Commercial  
Experience.Flight Crew.Total : 967  
Experience.Flight Crew.Last 90 Days : 162  
Experience.Flight Crew.Type : 162  
ASRS Report Number.Accession Number : 1840290  
Human Factors : Confusion  
Human Factors : Human-Machine Interface

## Events

Anomaly.Aircraft Equipment Problem : Critical  
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy  
Anomaly.Inflight Event / Encounter : Weather / Turbulence  
Detector.Person : Flight Crew  
When Detected : In-flight  
Result.Flight Crew : Diverted  
Result.Flight Crew : Landed As Precaution

## Assessments

Contributing Factors / Situations : Aircraft  
Primary Problem : Aircraft

## Narrative: 1

Name and I are both CFII's (Certified Flight Instructor Instrument). I was pilot flying, he was pilot monitoring. In the descent into ZZZ my flight instruments started reading erroneously- attitude indicator showed climbing left turn, altimeter and VSI showed descent, rate of turn showed wings level, heading indicator and mag compass showed present heading. Name and I decided to [advise ATC] and divert to an airport that reported VMC, asked for vectors to get out of IMC as quickly as possible. While diverting we decided the attitude indicator was reading incorrect, suction was within proper tolerances and heading indicator read correctly. We were able to land safely at an airport (ZZZ1) we are both very familiar with in VMC conditions. Left the plane overnight to take next steps in VFR day conditions.

## Narrative: 2

Two people on board. Two CFII's, I was monitoring the approach and not the pilot flying. In a descent into ZZZ, we had conflicting information on our instruments, eventually, we settled it was the attitude indicator that was not working properly. We were in hard IMC and we decided to request priority with ATC and ask for vectors out of IMC into VMC weather nearby. We then diverted to ZZZ1 which is a very familiar field for both of us. We landed safely in VMC conditions and left the plane there until a VFR flight can be conducted to check the airplane's instruments in VMC.



## Synopsis

C172 flight instructors reported during descent the flight attitude instruments gave conflicting information. The flight crew exited IMC conditions and performed a diversion in VMC conditions.

## Time / Day

Date : 202109

Local Time Of Day : 0601-1200

## Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.MSL.Single Value : 1555

## Environment

Flight Conditions : IMC

Weather Elements / Visibility : Rain

Light : Daylight

Ceiling.Single Value : 300

## Aircraft

Reference : X

ATC / Advisory.Tower : ZZZ

Aircraft Operator : Corporate

Make Model Name : Bonanza 36

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Passenger

Flight Phase : Final Approach

Flight Phase : Initial Climb

Airspace.Class G : ZZZ

## Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Corporate

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Commercial

Experience.Flight Crew.Total : 1172

ASRS Report Number.Accession Number : 1840140

Human Factors : Human-Machine Interface

Human Factors : Situational Awareness

Human Factors : Workload

Human Factors : Confusion

## Events

Anomaly.Deviation - Altitude : Excursion From Assigned Altitude

Anomaly.Deviation - Track / Heading : All Types

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

Anomaly.Deviation / Discrepancy - Procedural : Clearance

Anomaly.Inflight Event / Encounter : Unstabilized Approach

Anomaly.Inflight Event / Encounter : Weather / Turbulence

Anomaly.Inflight Event / Encounter : CFTT / CFIT  
Detector.Person : Flight Crew  
Miss Distance.Horizontal : 200  
Were Passengers Involved In Event : N  
When Detected : In-flight  
Result.Flight Crew : Took Evasive Action  
Result.Flight Crew : Executed Go Around / Missed Approach

## Assessments

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

## Narrative: 1

Flying the approach to Runway XX, from the South, I only saw a small glimpse of the runway but took note that the North end of the runway seemed to have a bit higher ceiling as I executed the missed approach. I informed the controller that I would like to shoot the approach to Runway XY. The winds were light and out of the South anyway. I did the procedure turn proceeded inbound and was given alternate miss instructions. I was told to turn heading 090 and climb to 3,000 feet. As I approached minimums I was dividing attention, trying to see the field and drifted left of course. I decided to go missed. I turned to 090 and began climbing when I spotted a cell phone tower through the clouds and made an evasive turn to avoid it. We decided with the weather being so low, we would return home and come another day. I spent the rest of the day debriefing what went wrong to cause such a close call. I determined that I had failed to proceed all the way to the missed approach point before executing the turn. Another factor was that my thinking that the clouds were higher to the North, yet the NOTAMs had raised the minimums to 1,555 feet which contributed to still not being visual with the runway environment when on the approach to XY. I was mentally prepared to fly the published miss well before the flight even began but hadn't anticipated being given alternate miss instruction at this field and was perhaps experiencing a little too much work load as single pilot in IMC which caused me to forget to proceed all the way to the MAP before turning.

## Synopsis

Pilot reported drifting left of course on approach and elected to fly a missed approach. Pilot further reported spotting a cell tower protruding thru the clouds and maneuvered to avoid it.

## Time / Day

Date : 202109

Local Time Of Day : 0601-1200

## Place

Altitude.MSL.Single Value : 100

## Environment

Flight Conditions : Marginal

Weather Elements / Visibility : Fog

Weather Elements / Visibility.Visibility : 0.25

Light : Daylight

Ceiling.Single Value : 100

## Aircraft

Reference : X

ATC / Advisory.Tower : ZZZ

Aircraft Operator : Personal

Make Model Name : Lake Aircraft Undifferentiated or Other Model

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 91

Flight Plan : VFR

Mission : Personal

Flight Phase : Cruise

Airspace.Class G : ZZZ

## Person

Location In Aircraft : Flight Deck

Reporter Organization : Personal

Function.Flight Crew : Single Pilot

Qualification.Flight Crew : Sea

Experience.Flight Crew.Total : 3085

Experience.Flight Crew.Last 90 Days : 20

Experience.Flight Crew.Type : 2729

ASRS Report Number.Accession Number : 1839640

Human Factors : Distraction

Human Factors : Situational Awareness

## Events

Anomaly.Aircraft Equipment Problem : Less Severe

Anomaly.Deviation / Discrepancy - Procedural : FAR

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

Anomaly.Ground Event / Encounter : Other / Unknown

Anomaly.Inflight Event / Encounter : VFR In IMC

Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control

Anomaly.Inflight Event / Encounter : Weather / Turbulence

Anomaly.Inflight Event / Encounter : CFTT / CFIT

Detector.Person : Flight Crew

Were Passengers Involved In Event : N

When Detected : In-flight  
Result.General : Maintenance Action  
Result.Flight Crew : Regained Aircraft Control  
Result.Aircraft : Aircraft Damaged

## Assessments

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

## Narrative: 1

I filed a VFR flight plan as a private Part 91 pilot in my Lake Amphibian aircraft between ZZZ and ZZZ1. I was given a cross border squawk code and was using it flying north towards my destination. My aircraft has a current IFR pitot static system certification and my instrument ticket is current. On a VFR flight in suddenly deteriorating ceiling and visibility, I was flying low over the water in a place noted on the chart as Name enroute to ZZZ1 in what is clearly class G airspace. I was under some pressure to arrive at XA45 in ZZZ1 due to customs wanting a landing within 15 minutes before or after the filed time of arrival. I have quite a bit of experience flying low over the water in class G airspace, able to land in low visibility ceiling conditions. At approximately XC15, flying low over the water I suddenly and completely unexpectedly hit the water. I had already configured the plane to a flaps down, mixture full rich, prop pitch flat attitude, for a water landing were it necessary to do so. But, I did not anticipate the plane hitting the water and when it did so the let down on the water was extremely violent. The plane pitched up in the air and back down slamming onto the water extremely hard. The plane came to a stop and myself and my single passenger were in dense fog. I [climbed] out of the cockpit with the plane on the water and stood on top of the cabin and looked at as much of the airframe as I could see to ascertain if there was any damage in the place as detectable in that portion of it visible floating above the surface of the water and saw none. There being no visibility and ceiling sufficient to fly in we displacement taxied for some 20 minutes. Being on the surface of the water and too low to contact anyone by radio my passenger called [number] and informed them that we would report back airborne if we were able to find a ceilings and visibility adequate to fly in. After 20 minutes of displacement taxiing on the water we got airborne and arrived a short time later in ZZZ1. I [received priority] going into the pattern because we did not get an up and locked light on the gear and wondered if we would get a down and locked light before landing the plane on the runway back to ZZZ and do a grass landing adjacent to the runway gear up rather than do that on the water or suffer a gear collapse landing on the runway. Tower was helpful. When I cycled the gear down I got a down and locked signal on the panel and proceeded to land the plane on the runway without incident. I flew home later that day and have not been able at this point to find damage to the airframe. It may be the case at the time of annual when I pull up the floorboards I will discover some bent frames but that is to be determined when I perform the inspection. The take away lesson in all of this is that despite not liking to set the plane down in saltwater because of a several hour clean up to prevent corrosion it is obvious to me that I need to be willing to do so if encountering lowering ceilings and visibility as I did when the event occurred.

## Synopsis

Pilot reported striking the water during low altitude flight caused by weather. After returning to the home airport, air frame damage was discovered.

## Time / Day

Date : 202109

## Place

Locale Reference.Airport : ZZZ.Airport  
State Reference : US  
Relative Position.Distance.Nautical Miles : 2  
Altitude.AGL.Single Value : 450

## Environment

Weather Elements / Visibility : Haze / Smoke  
Weather Elements / Visibility.Visibility : 9  
Light : Daylight

## Aircraft

Reference : X  
ATC / Advisory.Tower : ZZZ  
Aircraft Operator : Personal  
Make Model Name : Cessna 152  
Crew Size.Number Of Crew : 1  
Operating Under FAR Part : Part 91  
Flight Plan : VFR  
Mission : Personal  
Flight Phase : Landing  
Route In Use : Visual Approach  
Airspace.Class D : ZZZ

## Person

Location Of Person.Aircraft : X  
Location In Aircraft : Flight Deck  
Reporter Organization : Personal  
Function.Flight Crew : Single Pilot  
Qualification.Flight Crew : Private  
Experience.Flight Crew.Total : 192  
Experience.Flight Crew.Last 90 Days : 3  
Experience.Flight Crew.Type : 57  
ASRS Report Number.Accession Number : 1839342  
Human Factors : Situational Awareness  
Human Factors : Human-Machine Interface

## Events

Anomaly.Deviation - Altitude : Excursion From Assigned Altitude  
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy  
Anomaly.Deviation / Discrepancy - Procedural : Clearance  
Anomaly.Inflight Event / Encounter : Weather / Turbulence  
Anomaly.Inflight Event / Encounter : VFR In IMC  
Anomaly.Inflight Event / Encounter : CFTT / CFIT  
Detector.Automation : Air Traffic Control  
Detector.Person : Flight Crew

Detector.Person : Air Traffic Control  
Were Passengers Involved In Event : N  
When Detected : In-flight  
Result.Flight Crew : Took Evasive Action  
Result.Flight Crew : Became Reoriented  
Result.Air Traffic Control : Provided Assistance

## Assessments

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

## Narrative: 1

I was returning to ZZZ. I had received the latest ATIS reporting VFR conditions and called the tower 10nm northeast of the field to establish connection. I was at 1,500 ft. when I made the call. As I was leaving the hills behind me and crossing the bay I was getting progressively worried about visibility due to haze. I could not see most of the landmarks (could barely see the edge of land ahead of me and the bridge to my right), but I was continuing to approach the airport. I slowly descended to pattern altitude (800 ft.) and about 2 miles from the airport (keeping about 80-85 kts.), starting to panic as I could not see the runway and most things around it. I had been given instructions for right traffic on Runway XX. I descended to about 450 ft. when the Controller asked me to make a right 360 and get back to pattern altitude. I had completely passed the runway - I told ATC I cannot see the runway. ATC gave me headings and eventually was able to clearly see the runway, joined the pattern and proceeded to land. I should have declared an emergency considering I did not think I was in VFR conditions and starting to get anxious and for sure I should have never descended below pattern altitude without having a visual of the runway and having properly entered the pattern.

## Synopsis

Pilot reported becoming disoriented on approach due to fog and haze and descended below approach altitude. ATC provided assistance, requiring Pilot to make a 360 degree turn and climb to pattern altitude, subsequently landing safely.

## Time / Day

Date : 202109

Local Time Of Day : 0001-0600

## Place

Locale Reference.ATC Facility : ZZZ.TRACON

State Reference : US

## Aircraft

Reference : X

ATC / Advisory.Tower : ZZZ

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 : Initial Approach

Route In Use : Vectors

Airspace.Class C : ZZZ

Airspace.Class E : ZZZ1

## Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Captain

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Air Transport Pilot (ATP)

ASRS Report Number.Accession Number : 1839242

Human Factors : Communication Breakdown

Human Factors : Situational Awareness

Human Factors : Time Pressure

Communication Breakdown.Party1 : Flight Crew

Communication Breakdown.Party2 : Flight Attendant

## Events

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

Anomaly.Inflight Event / Encounter : Weather / Turbulence

Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control

Detector.Person : Flight Crew

Were Passengers Involved In Event : N

When Detected : In-flight

Result.General : Physical Injury / Incapacitation

Result.Flight Crew : Regained Aircraft Control

## Assessments



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

## Narrative: 1

Trip started with FA (Flight Attendant) Brief re: Weather enroute and at ZZZ at Arrival; Passengers got same brief. Twice enroute I had FA's take their seats due to Company Alert, and Weather deviation around Utah; no issues... 90nm from ZZZ, I briefed the Passengers of the weather and Arrival info, expecting a bumpy ride on the descent, and that we would be landing, and then parking at Gate XX, at XX:35 ZZZ Time; 30 minutes to landing. 20 minutes to landing, I made a PA for the FA's to take their seats; as a precaution. We were cleared direct ZZZZZ and to keep our speed up. We were then cleared to descend via the ZZZZZ and transition to 310 kts., as we were #1. We were then given a heading for vectors to the ILSXX Approach, and descend to 12,000 ft. At 12,000 ft., I cycled the seat belt switch and stated "Flight Attendants prepare for landing" over the PA; early on purpose. We were then given Descend to 8,000 ft., followed by a turn to downwind and descend to 4,000 ft. We were IMC, it was 9 degrees Celsius, 29.49, and strong winds and moderate rain. Descending from 5,000 ft. to 4,000 ft., we encountered severe turbulence; the AP kicked off and the airplane pitched up and down erratically. I hand flew the airplane to regain control of our Flight Path, and we settled down at 4,000 ft. and re-engaged the AP. We were then given a descent to 3,000 ft., followed by a heading to Intercept the ILSXX Approach Course, and cleared for the approach. We broke out at about 2,000 ft., configured for a full flap landing, encountered 30 kts. headwind on Final, followed by a 10 kt. tailwind on landing, and made a normal landing. As we were rolling out, we got a call from the back (FA's), and the FO (First Officer) answered as I taxied clear of the runway. She informed me that the #2 FA hit the floor hard on her left side, and could we ask for Medics to meet us at the Gate. We were met at the Gate by 2 ZZZ Airport [Officials], and they checked out our #2 FA. They recommended that she go to the hospital, as did I, so she could get a proper check out. It was also recommended that at least 1 other FA go with her. The FA's then left the aircraft, as did the FO. I stayed with the aircraft, so I could note in the logbook that an aircraft inspection would be needed do to our encounter with severe turbulence. FA did not go to hospital, and returned to work the next day. The 2 AFT FA's did not take their seats when instructed; by my PA: "Flight Attendants take your seats". FA's need to follow instructions, i.e. when told to Be Seated, then Take Your Seat.

## Synopsis

Captain reported aft Flight Attendants were slow to take their seats during approach in turbulence, resulting in an injury to one Flight Attendant.

## Time / Day

Date : 202107

Local Time Of Day : 0601-1200

## Place

Locale Reference.Airport : OSH.Airport

State Reference : WI

Relative Position.Angle.Radial : 300

Relative Position.Distance.Nautical Miles : 2

Altitude.AGL.Single Value : 500

## Environment

Flight Conditions : Mixed

Light : Daylight

## Aircraft

Reference : X

ATC / Advisory.Tower : OSH

Aircraft Operator : Personal

Make Model Name : Small Aircraft, Low Wing, 1 Eng, Retractable Gear

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 91

Flight Plan : None

Mission : Personal

Flight Phase : Initial Climb

Route In Use : None

Airspace.Class D : OSH

## Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Personal

Function.Flight Crew : Pilot Not Flying

Function.Flight Crew : Instructor

Qualification.Flight Crew : Flight Instructor

Qualification.Flight Crew : Commercial

Qualification.Flight Crew : Instrument

Experience.Flight Crew.Total : 600

Experience.Flight Crew.Last 90 Days : 80

Experience.Flight Crew.Type : 140

ASRS Report Number.Accession Number : 1838504

Human Factors : Workload

## Events

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

Anomaly.Deviation / Discrepancy - Procedural : FAR

Anomaly.Inflight Event / Encounter : Weather / Turbulence

Anomaly.Inflight Event / Encounter : VFR In IMC

Detector.Person : Flight Crew

When Detected : In-flight  
Result.Flight Crew : Became Reoriented

## Assessments

Contributing Factors / Situations : Airspace Structure  
Contributing Factors / Situations : Procedure  
Contributing Factors / Situations : Weather  
Primary Problem : Weather

## Narrative: 1

The pilot flying was a XXX-hour Private pilot, without an instrument rating, in the left seat. I was providing some instruction from the right seat, but was mostly there to provide backup to a relatively new pilot on her first big cross-country trip. The Pilot Flying (PF) by this point had approximately 30 hours in type, and was becoming comfortable with the complexity of this high-performance single and the speed at which things happen. By prior agreement, I was serving as PIC on all flights. On this flight from OSH to ZZZ, the planned training topics included: - the OSH VFR departure procedure - managing the very busy traffic environment around OSH - enroute simulated attitude instrument flying - practice IFR approach We were departing OSH during EAA Airventure, shortly after the airport opened in the morning. It was busy, but by no means crazy. We had reserved an IFR departure slot, but opted not to confirm it the day before, as the forecast was CAVU. We wanted to leave the scarce IFR slot for someone who truly needed it, and I wanted to give the PF the opportunity to perform the Oshkosh VFR departure. We received a full ForeFlight briefing that morning, which showed CAVU at OSH and for the entire route of flight. From the ground at OSH, there wasn't a cloud to be seen. Aircraft were departing runway 27 and I believe also 36. We were assigned runway 27, which (per the Oshkosh NOTAM) required that we fly a heading of 270-360 at or below 1,300' MSL (500' AGL) until clear of the class D. As our route of flight was SE, we planned to depart runway 27 to the NW, fly around the north side of the class D, then proceed SE on course. All went as planned until we reached approx. 1-2nm west of the departure end of OSH runway 27. We were climbing through 1100' to 1300' MSL, and the weather had suddenly and severely deteriorated. I estimate that visibility was perhaps 3SM, and as we continued our climb, we began to enter the ragged underside of an overcast layer that I estimate was around 400' AGL (1,200' MSL). I instructed the PF to stop the climb, descend as necessary to remain below the cloud layer, and fly a heading of 360. She leveled off at 1,150' MSL. Knowing that this was only 300-350' AGL, we were both on extremely high alert for towers, aided by the VFR sectional. I could see Lake Butte des Morts approximately 2nm north, which (a) would relieve us from worrying about towers, and (b) had a sky that looked much brighter. Once over Lake Butte des Morts, we could clearly see Lake Winnebago to the east, to which we proceeded at 1,200' MSL. Once over Lake Winnebago, weather improved very rapidly, and the rest of the flight was uneventful. We were still listening to the OSH tower as we reached Lake Winnebago, and they continued to dispatch pilots to the NW from runway 27. Now that I had a small amount of mental capacity to spare, I called tower and informed them that conditions NW of the field were "just barely VFR", and to exercise extreme caution. They sent one more aircraft in that direction, who reported that conditions were "definitely not VFR". That pilot returned to land at OSH, which was then closed to VFR departures. In hindsight, I made several errors in judgment that morning: 1. The subsequent pilot was quite right: the weather conditions were definitely not VFR. When I made that report to the tower, I was fixated on visibility (which was, I believe, barely VFR -- perhaps 3SM). But when I had time to think more clearly, it was obvious that we were only just clear of cloud, not 500' below. Furthermore, even if clear-of-cloud had been legal (which it was not), 1,150-1,200' MSL was a very dangerous

altitude; in this area, it was true scud running. We passed less than 1NM from a tower less than 100' below us (although we had it in sight). 2. The moment that we encountered weather that was worse than forecast, we should've done as the later pilot did: inform the tower that conditions were not VFR, and coordinate an eastbound turn (not with standing the requirements in the NOTAM). In hindsight, I gave far too much deference to the procedure in the NOTAM, and did not want to deviate from its mandate. I didn't want to be "the guy who screwed up the OSH departure and snarled traffic for everyone" or worse, create collision risk by being where I shouldn't be. Yet it's obvious that the extremely professional controllers would've managed the situation, and it would've been far preferable to scud running. I failed to exercise my ultimate authority as PIC (Pilot In Command) that morning, and in my opinion this was the most critical error. 3. In hindsight, the one clue that we missed was a METAR at PCZ, 29nm NW of OSH, showing OVC005. This should've told us that, although weather at and east of OSH was extremely VFR, it was much worse only a short distance away. At the very least, this could've prepared us for the possibility that we would encounter poor weather nearby, and have a complete plan ready. Had we been able to perform a standard downwind departure to the east, as we would any other time, it's highly likely that we would've remained CAVU the entire time.

## Synopsis

General aviation pilot departed airport VFR when when weather near the airport was marginal with low clouds in the area.

## Time / Day

Date : 202109

Local Time Of Day : 1201-1800

## Place

Locale Reference.ATC Facility : ZZZ.ARTCC

State Reference : US

Altitude.MSL.Single Value : 33000

## Environment

Flight Conditions : IMC

Weather Elements / Visibility : Turbulence

Weather Elements / Visibility : Windshear

Weather Elements / Visibility.Visibility : 0

Light : Daylight

## Aircraft

Reference : X

ATC / Advisory.Center : ZZZ

Aircraft Operator : Personal

Make Model Name : Cessna Citation Mustang (C510)

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Personal

Flight Phase : Descent

## Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Personal

Function.Flight Crew : Pilot Flying

Function.Flight Crew : Single Pilot

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Private

Qualification.Flight Crew : Multiengine

Qualification.Other

Experience.Flight Crew.Total : 4000

Experience.Flight Crew.Last 90 Days : 30

Experience.Flight Crew.Type : 800

ASRS Report Number.Accession Number : 1837918

Human Factors : Workload

Human Factors : Time Pressure

## Events

Anomaly.Deviation - Track / Heading : All Types

Anomaly.Deviation / Discrepancy - Procedural : Clearance

Anomaly.Inflight Event / Encounter : Weather / Turbulence

Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control

Detector.Person : Flight Crew  
Miss Distance.Horizontal : 90  
When Detected : In-flight  
Result.Flight Crew : Regained Aircraft Control

## Assessments

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

## Narrative: 1

At approximately XA:10, I encountered severe turbulence/wind shear and the autopilot disengaged as I was beginning a descent from 33000 ft. to ZZZZZ intersection on the ZZZZZ1 arrival into ZZZ1. I temporarily lost control [of] the aircraft as it began a hard, left turn of almost 90 degrees before I was able to regain control and return to my assigned route. On board radar showed no precipitation ahead at the time.

## Synopsis

C510 pilot reported a temporary loss of aircraft control due to a severe turbulence/wind shear encounter during initial descent.

## Time / Day

Date : 202109

Local Time Of Day : 1201-1800

## Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.AGL.Single Value : 0

## Environment

Flight Conditions : VMC

Weather Elements / Visibility.Visibility : 10

Weather Elements / Visibility.Other

Light : Daylight

## Aircraft

Reference : X

ATC / Advisory.Tower : ZZZ

Aircraft Operator : Personal

Make Model Name : Skyhawk 172/Cutlass 172

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Flight Plan : VFR

Mission : Training

Flight Phase : Landing

Route In Use : Visual Approach

## Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Personal

Function.Flight Crew : Pilot Flying

Function.Flight Crew : Single Pilot

Qualification.Flight Crew : Student

Experience.Flight Crew.Total : 31

Experience.Flight Crew.Last 90 Days : 31

Experience.Flight Crew.Type : 31

ASRS Report Number.Accession Number : 1837907

Human Factors : Workload

Human Factors : Time Pressure

## Events

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

Anomaly.Ground Excursion : Runway

Anomaly.Ground Event / Encounter : Loss Of Aircraft Control

Anomaly.Inflight Event / Encounter : Weather / Turbulence

Detector.Person : Flight Crew

When Detected.Other

Result.General : Flight Cancelled / Delayed  
Result.Flight Crew : Overcame Equipment Problem

## Assessments

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

## Narrative: 1

While coming in to land in the C172, a strong right crosswind had developed, causing me to put in a crosswind correction with the left rudder. As I was coming in to land at ZZZ, approximately 20 ft. off of the ground a gust had occurred, causing me to put in even more crosswind correction. The rear two wheels touched down with no issue, and then the nose wheel touched down with some left rudder correction still in place, causing the nose of the plane to veer left on the runway at 65 kt. Not wanting to overcorrect the plane and cause damage to self, plane, or surrounding structures, I took the opportunity to safely guide the plane into the grass to the left of the runway.

## Synopsis

C172 pilot reported a runway excursion during a crosswind landing in order to avoid injury and property damage.



## Time / Day

Date : 202109

Local Time Of Day : 1201-1800

## Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.AGL.Single Value : 0

## Environment

Light : Daylight

## Aircraft

Reference : X

ATC / Advisory.Tower : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : B737-800

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Takeoff / Launch

## Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Pilot Flying

Function.Flight Crew : Captain

ASRS Report Number.Accession Number : 1837579

## Events

Anomaly.Ground Event / Encounter : Weather / Turbulence

Anomaly.Ground Event / Encounter : Loss Of Aircraft Control

Detector.Person : Flight Crew

When Detected : In-flight

Result.Flight Crew : Took Evasive Action

## Assessments

Contributing Factors / Situations : Weather

Primary Problem : Weather

## Narrative: 1

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

## Synopsis

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

## Time / Day

Date : 202108

Local Time Of Day : 0601-1200

## Place

Locale Reference.ATC Facility : ZZZ.Tower

State Reference : US

Relative Position.Distance.Nautical Miles : 0.0

Altitude.AGL.Single Value : 300

## Environment

Flight Conditions : IMC

Weather Elements / Visibility : Rain

Weather Elements / Visibility.Visibility : 3

Light : Daylight

Ceiling.Single Value : 300

## Aircraft : 1

Reference : X

ATC / Advisory.Tower : ZZZ

Aircraft Operator : Personal

Make Model Name : Small Aircraft, Low Wing, 1 Eng, Fixed Gear

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Personal

Nav In Use.Localizer/Glideslope/ILS : ILS

Flight Phase : Final Approach

Route In Use : Direct

Airspace.Class B : ZZZ

## Aircraft : 2

Reference : Y

Aircraft Operator : Air Carrier

Make Model Name : Commercial Fixed Wing

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission.Other

Flight Phase.Other

Airspace.Class B : ZZZ

## Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Personal

Function.Flight Crew : Single Pilot

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Private

Experience.Flight Crew.Total : 1024  
Experience.Flight Crew.Last 90 Days : 8.7  
Experience.Flight Crew.Type : 800  
ASRS Report Number.Accession Number : 1836824  
Human Factors : Communication Breakdown  
Human Factors : Confusion  
Human Factors : Distraction  
Human Factors : Situational Awareness  
Human Factors : Time Pressure  
Human Factors : Workload  
Human Factors : Human-Machine Interface  
Communication Breakdown.Party1 : Flight Crew  
Communication Breakdown.Party2 : ATC

## Events

Anomaly.Conflict : Ground Conflict, Critical  
Anomaly.Deviation - Track / Heading : All Types  
Anomaly.Deviation / Discrepancy - Procedural : Clearance  
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy  
Anomaly.Inflight Event / Encounter : Weather / Turbulence  
Anomaly.Inflight Event / Encounter : Unstabilized Approach  
Detector.Automation : Air Traffic Control  
Detector.Person : Flight Crew  
Detector.Person : Air Traffic Control  
Miss Distance.Horizontal : 60  
Miss Distance.Vertical : 300  
Were Passengers Involved In Event : N  
When Detected : In-flight  
Result.Flight Crew : Executed Go Around / Missed Approach  
Result.Flight Crew : Diverted  
Result.Flight Crew : Took Evasive Action  
Result.Air Traffic Control : Issued Advisory / Alert

## Assessments

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

## Narrative: 1

On the day of the flight, I intended to fly with my daughter from ZZZ to ZZZ1 for an appointment in town. Weather during the approach was IMC with intermittent light to moderate rain and heavy traffic in the vicinity of ZZZ1. After being handed off to ZZZ1 Approach, I received instructions to "maintain best forward speed" and cleared for the approach. I was unfamiliar with the instruction to "maintain best forward speed". While I did not ask for clarification due to the radio traffic volume and my own workload, I interpreted the instruction to mean that I needed to maintain my current speed during the approach to keep the necessary separation with the faster traffic behind me. I was using the autopilot to fly the approach; however, the glideslope did not capture, likely due to my faster-than-usual airspeed. Since I was not in landing configuration and was fast, I disengaged the autopilot and began hand-flying the final approach segment. Unfortunately, I began to fall behind the aircraft. It became more difficult to maintain course as I neared the localizer and course corrections were required more frequently than

I am accustomed to, again due to my faster-than-usual airspeed. As I approached minimum altitude, I was slightly below glide-slope and right of course. I was able to recognize the airport environment, but did not have forward visibility and could not identify the runway environment. I began to initiate the missed approach at about the same time the tower instructed me to go around. Since it appeared ZZZ1 was below minimums I elected to divert to ZZZ2. I landed at ZZZ2 without incident. I was not aware that I may have created an unsafe situation until I was contacted via phone by the FAA ASI on Date. I was informed at that time that ATC had forwarded the incident for investigation. It appears that at the termination of my approach, before initiating the missed approach procedure my aircraft overflew the adjacent taxiway where two airliners were holding.

## Synopsis

Instrument Rated Single Engine Pilot reported an unstable approach in IMC, resulting in a missed approach during which the pilot overflew two airliners on the adjoining taxiway.

## Time / Day

Date : 202109

Local Time Of Day : 1801-2400

## Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.MSL.Single Value : 3100

## Environment

Weather Elements / Visibility : Rain

Weather Elements / Visibility : Thunderstorm

Weather Elements / Visibility : Turbulence

Weather Elements / Visibility : Windshear

Light : Night

## Aircraft

Reference : X

ATC / Advisory.TRACON : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : A321

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Nav In Use : FMS Or FMC

Flight Phase : Initial Approach

Airspace.Class B : ZZZ

## Component

Aircraft Component : Autoflight System

Aircraft Reference : X

Problem : Malfunctioning

## Person : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Pilot Not Flying

Function.Flight Crew : First Officer

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

ASRS Report Number.Accession Number : 1836299

Human Factors : Workload

Human Factors : Troubleshooting

Human Factors : Fatigue

## Person : 2

Location Of Person.Aircraft : X  
Location In Aircraft : Flight Deck  
Reporter Organization : Air Carrier  
Function.Flight Crew : Pilot Flying  
Function.Flight Crew : Captain  
Qualification.Flight Crew : Multiengine  
Qualification.Flight Crew : Air Transport Pilot (ATP)  
Qualification.Flight Crew : Instrument  
ASRS Report Number.Accession Number : 1836313  
Human Factors : Workload  
Human Factors : Troubleshooting  
Human Factors : Fatigue

## Events

Anomaly.Aircraft Equipment Problem : Less Severe  
Anomaly.Deviation - Speed : All Types  
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy  
Anomaly.Inflight Event / Encounter : Weather / Turbulence  
Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control  
Detector.Person : Flight Crew  
When Detected : In-flight  
Result.Flight Crew : Executed Go Around / Missed Approach  
Result.Flight Crew : Overcame Equipment Problem  
Result.Flight Crew : Regained Aircraft Control  
Result.Flight Crew : FLC complied w / Automation / Advisory

## Assessments

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

## Narrative: 1

I was the First Officer and pilot monitoring on our flight from ZZZ1 to ZZZ. This was the last leg of a three-day trip. We taxied out on time and parked to wait out a ground stop. ZZZ was just starting to get the worst of a tropical storm. Convective SIGMETs for embedded thunderstorms covered much of the mid-Atlantic states. The ground stop lifted and we were able to depart 2 hours and 2 minutes after pushback. The first part of the flight went fine, and we were clear of weather until contacting Approach Control. The controller gave us good vectors, but we still had to penetrate some moderate rain showers. Our aircraft was an older 321 with CRT screens and the old radar display, and it was night by this point. This made it difficult to know the intensity until we were very close to the depicted weather. We were able to keep clear of magenta turbulence indications on the display, yet we still encountered moderate to severe turbulence with speed indications +/- 20 kt. below 8,000 ft. Upon turning base, we were in a clear area and could see one more cell crossing the final approach course. Traffic ahead that had just flown through the same cell reported moderate rain and smooth ride. Our ride was worse than that, and after configuring we got an aural predictive windshear warning, "GO AROUND, WINDSHEAR AHEAD." We initiated a go-around. The ride was moderate and there were big airspeed fluctuations, but we didn't get a reactive windshear alert. Approach vectored us back for another ILS. The downwind took us around more moderate intensity rain and

turbulence. Approach informed us that traffic behind us had landed, and that we were the only one to go around so far. I believe two aircraft landed between our first approach and our second attempt. Our second approach also resulted in a go-around. When we encountered the heaviest part of the rain, airspeed loss was unacceptable and we initiated the go-around. We did not get a predictive windshear alert. I don't recall if we had a reactive windshear warning, but almost instantly we had multiple ECAM warnings and cautions. The autopilot disconnected and Captain assumed manual control - he was pilot-flying throughout the event. The ride felt very similar to how the simulator presents a windshear event. Recovery felt like it took forever. With no autopilot and multiple F/CTRL ECAM messages, we were fully caught up in recovering to a normal state. We climbed up to 3000, which was [the] missed approach altitude. Flight director guidance was fluctuating a lot, and we turned off FD 1 and 2. Re-configuring the aircraft after the approach was delayed, the airspeed trend arrow indicated a very imminent flap over-speed condition. I asked the Captain if he wanted flaps up, and then raised them when he indicated in the affirmative. My perception here was that we were in level flight and accelerating rapidly. In retrospect, I misjudged our energy state and failed to follow the prescribed schedule for flap retraction, retracting them too quickly. As the flaps were retracting, we were somewhere around 3,100 ft. correcting for 3,000, in moderate turbulence. These factors all compounded, resulting in a low-energy state and stall warning indication. I'm not sure what the auto thrust was commanding at this point, or if it had reduced thrust for us to descend back to 3000. I believe I yelled, "Nose down!" and Captain responded that he was full forward stick. I momentarily pushed my flight stick forward and was corrected by the aural "dual input" alert. Captain recovered the aircraft. I gave ATC a quick description of our flight control computer problems and they climbed us to 5000 on vectors. We began the process of going through the ECAM malfunctions, with me working the ECAM. The autopilot was inoperative for the rest of the flight. F/CTRL ALTN LAW was next. There is no follow-up for this. I believe the next was F/CTRL ELAC 1 PITCH FAULT and F/CTRL ELAC 2 PITCH FAULT. I know that's the checklist I went to, but after the fact I can't say whether it was the ELAC PITCH FAULT or a generic ELAC FAULT. The pitch fault follow-up prohibits resetting an ELAC in flight, and so we did not attempt a computer reset. The ELAC FAULT reset procedure does allow a reset in flight if you do it one at a time and there are no uncommanded maneuvers happening. After follow-ups, I called Dispatch to see if we could go to ZZZ2 or ZZZ3 or ZZZ4. We had around 12,000 lb. of fuel. ZZZ4 appeared to have storm cells at the field but ZZZ2 and ZZZ3 were clear. I expressed that we were hand-flying with degraded flight controls and needed a clear airport. Dispatch gave us a minimum fuel of 8.0 to go to ZZZ4 if we could not get into ZZZ. Ultimately, ZZZ updated us that winds were shifting straight out of the north, and they could turn the airport around for us. The non-normal section of the Land App confirmed we had enough runway landing distance. The final for XXR was clear of storms, and we were able to shoot the ILS and land. So many factors were at play here. At the time we entered ZZZ airspace we had been on duty for 10 hours. We were navigating around severe weather in a tropical storm with the old-style radar. It was working well, but overall, it just doesn't provide the clarity that the new radar presents. We were in continuous turbulence of varying intensities, occasionally severe, before our first approach. Our picture of what the weather was doing was not as clear as the situational awareness that can be achieved in cruise flight. We were relying on ATC vectors through areas that other aircraft had just previously flown. Reports from other aircraft indicated acceptable conditions, or conditions that we could plan for by following severe weather avoidance guidance. The predictive windshear system did its job the first time and we had a clean go-around. Other aircraft landed after our missed approach and conditions were ok. Startle factor played a huge role on the second attempt. Windshear plus multiple ECAMs and autopilot failure created a complex and dynamic situation. We were getting bounced all over the place. We were struggling to get the airplane under control. The monitoring



challenge was huge because of the turbulence and the degraded flight controls. I was making FCU inputs in between running checklist items. I had sent an ACARS to Dispatch asking where we should go and listing our system failures, and got no response. The crew phone app worked well enough, but I was frustrated that the feedback we got was that it would be preferred that we hold for ZZZ or go to our listed alternate. I'm sure the Dispatcher could hear my frustration. I am glad that we were able to safely continue to ZZZ, but I wanted to get the plane on the ground without dealing with any more threats to the flight. Holding between thunderstorms with no autopilot in alternate law is an unnecessary risk. I'm not sure why the ground stop for ZZZ was lifted. After the flight, we learned that there had been 7 confirmed tornadoes in the area right around ZZZ. These storms were moving very quickly. It looked like it was possible that ZZZ would clear up before we got there, but there was a good chance it would not. Our decision to go was based on having a lot of fuel, and two alternates. Our second alternate was ZZZ3, which remained clear. This meant that if at any point the path ahead looked bad, we could turn around and have an escape plan. The weather moving in from the south across the final ended up being the worst that we would encounter. If we had delayed this flight by another hour, I think we would have been better off.

## Narrative: 2

On first approach, got a windshear warning and went around. On second approach with moderate to almost severe turbulence, we hit a heavy rain shower. From what I remember we were configured for landing when we hit turbulence. Right then from what I can remember, the autopilot kicked off with the nose pitching up and the speed tape coming up. I pushed the power to climb and tried pushing the nose down. At first, nothing was happening. We did get a low-energy warning too. The plane did recover and started to respond to control inputs. On the ECAM we had F/CTRL ALTN LAW [and] ELAC 1&2 PITCH FAULT. I was flying, the FO (First Officer) did the ECAM and follow-ups and communication. No resets in the air so we looked at going somewhere I could shoot a visual approach. ZZZ Approach had us flying a box pattern until we figured out what we wanted to do. ZZZ Approach then gave us the option to land on XXR and visibility was adequate for a visual. We made an uneventful landing in normal law and gusty crosswinds. I'm guessing we hit the rain at the wrong time. ATC did a good job vectoring us between. The aircraft in front of us just had heavy rain and a smooth ride. Cells were building very fast. I'm thinking that one of the probes froze up momentarily, giving us the speed tape fluctuations. One thing that bothered me was that we couldn't get a hold of Dispatch right away, even after sending the 7700 over ACARS. The FO did a great job with all the ECAM and checklist procedures.

## Synopsis

A321 flight crew reported windshear, heavy rain, and severe turbulence on approach along with the loss of autopilot systems that resulted in multiple go-arounds before finally safely landing at the destination airport.

## Time / Day

Date : 202108

Local Time Of Day : 1201-1800

## Place

Locale Reference.ATC Facility : ZZZ.ARTCC

State Reference : US

Relative Position.Angle.Radial : 285

Relative Position.Distance.Nautical Miles : 30

Altitude.MSL.Single Value : 8000

## Environment

Flight Conditions : IMC

Weather Elements / Visibility : Thunderstorm

Light : Daylight

## Aircraft

Reference : X

ATC / Advisory.Center : ZZZ

Aircraft Operator : Personal

Make Model Name : Small Aircraft, Low Wing, 1 Eng, Fixed Gear

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Flight Plan : IFR

Mission : Personal

Flight Phase : Cruise

Route In Use : Direct

Airspace.Class E : ZZZ

## Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Personal

Function.Flight Crew : Pilot Flying

Function.Flight Crew : Single Pilot

Qualification.Flight Crew : Private

Qualification.Flight Crew : Instrument

Experience.Flight Crew.Total : 932

Experience.Flight Crew.Last 90 Days : 17

Experience.Flight Crew.Type : 214

ASRS Report Number.Accession Number : 1835463

Human Factors : Communication Breakdown

Human Factors : Distraction

Human Factors : Time Pressure

Human Factors : Workload

Human Factors : Situational Awareness

Communication Breakdown.Party1 : Flight Crew

Communication Breakdown.Party2 : ATC

## Events

Anomaly.ATC Issue : All Types  
Anomaly.Deviation - Altitude : Excursion From Assigned Altitude  
Anomaly.Deviation - Speed : All Types  
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy  
Anomaly.Inflight Event / Encounter : Weather / Turbulence  
Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control  
Detector.Person : Flight Crew  
Miss Distance.Vertical : 500  
Were Passengers Involved In Event : N  
When Detected : In-flight  
Result.Flight Crew : Took Evasive Action  
Result.Flight Crew : Requested ATC Assistance / Clarification  
Result.Flight Crew : Became Reoriented  
Result.Air Traffic Control : Provided Assistance

## Assessments

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

## Narrative: 1

During an IFR flight Date from ZZZ1 to ZZZ I encountered clouds and thunderstorms that were not forecast during the planned flight. The area of the thunderstorm was also not showing any data on my MFD XM weather display. I requested to climb from 15,000 ft. to 16,000 ft. expecting to be clear of the clouds, was cleared to 16,000 ft. The cloud tops were rising so requested and was cleared to 17,000 ft. The clouds were rising fast so I then requested lower and to deviate to the north to stay clear of the clouds. Was cleared to deviate as required, at or above 8,000 ft. What had been a broken layer of clouds was rapidly joining together and evident I could not fly below them either. I requested a report from ATC of what was ahead, the controller said all she had was light rain at my 11:00 but clear between our current location and ZZZ. I told ATC that it looked like a "wall of water ahead of me, and could I get vectors to stay clear". ATC said I could go direct to ZZZ and be clear of the rain. I turned direct ZZZ and almost immediately upon entering the cloud I encountered severe turbulence, reduced power to slow to 120, turned autopilot off, was attempting to hold attitude, airspeed, then altitude. We were clearly in an unexpected thunderstorm with severe downdrafts and updrafts that caused very erratic airspeed and altitude. There was severe static on the radio making communication difficult. Frequent lightning strikes was causing the static. I received some garbled and static filled transmissions from ATC to climb, which I acknowledged and attempted to comply with but was extremely busy trying to maintain control of the attitude and airspeed. Prior to getting clear of the thunderstorm the Center Controller handed me off to the Approach Controller, during this time communications were very hard to hear with the static, so I am not sure I received all instructions. Once I switched to the Approach Controller and was clear of the cloud, I got the weather at ZZZ and requested vectors for the RNAV Runway XX approach. ATC gave vectors to final with minimum altitude that was 3,000 feet high, ATC had me change to ZZZ Tower. I told tower I was too high so they approved making a 360 degree turn to loose altitude and cleared to land. Balance of the flight was uneventful. I understand the Center radar has a delay so it would be good to be reminded of that before accepting a vector for weather or trust there is not a thunderstorm.

## Synopsis

Single Engine pilot on an IFR flight plan encountered unforecasted weather containing a thunderstorm and severe turbulence. Maintaining airspeed, altitude and communication with ATC was difficult and an altitude deviation may have occurred.

## Time / Day

Date : 202108

Local Time Of Day : 1201-1800

## Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.AGL.Single Value : 0

## Environment

Flight Conditions : VMC

Weather Elements / Visibility.Visibility : 10

Light : Daylight

Ceiling.Single Value : 12000

## Aircraft

Reference : X

ATC / Advisory.Tower : ZZZ

Aircraft Operator : Personal

Make Model Name : Small Aircraft, Low Wing, 1 Eng, Fixed Gear

Crew Size.Number Of Crew : 1

Operating Under FAR Part : Part 91

Flight Plan : VFR

Mission : Personal

Flight Phase : Landing

Route In Use : Visual Approach

Airspace.Class D : ZZZ

## Component

Aircraft Component : Aeroplane Flight Control

Aircraft Reference : X

Problem : Improperly Operated

## Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Personal

Function.Flight Crew : Single Pilot

Qualification.Flight Crew : Private

Experience.Flight Crew.Total : 156

Experience.Flight Crew.Last 90 Days : 21

Experience.Flight Crew.Type : 61

ASRS Report Number.Accession Number : 1835135

Human Factors : Confusion

Human Factors : Situational Awareness

Human Factors : Human-Machine Interface

## Events

Anomaly.Aircraft Equipment Problem : Less Severe  
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy  
Anomaly.Ground Excursion : Runway  
Anomaly.Ground Event / Encounter : Loss Of Aircraft Control  
Anomaly.Ground Event / Encounter : Weather / Turbulence  
Anomaly.Ground Event / Encounter : Object  
Anomaly.Inflight Event / Encounter : Weather / Turbulence  
Detector.Person : Flight Crew  
Were Passengers Involved In Event : N  
When Detected : In-flight  
Result.General : Maintenance Action  
Result.General : Flight Cancelled / Delayed  
Result.Flight Crew : Regained Aircraft Control  
Result.Flight Crew : Became Reoriented  
Result.Aircraft : Aircraft Damaged

## Assessments

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

## Narrative: 1

Landing XXL at ZZZ. Wind reported variable at 5 kts. Wind estimated to be 090 at 10 kts. gusting 20. Held crab and transitioned to slip for landing. Landed center line, but sudden gust lifted right wing and the aircraft veered left. I applied full right aileron, but aircraft departed the left side of the runway. The left main wheel fairing struck a runway light before I could reenter the runway. The nose wheel and right main remained on the runway. The aircraft suffered minor damage to the wheel fairing, and the runway edge light was damaged. Reported damage to Tower, Airport & FAA.

## Synopsis

Pilot reported a runway excursion caused by gusting winds.

## Time / Day

Date : 202108

Local Time Of Day : 1201-1800

## Place

Locale Reference.Airport : ZZZ.Airport

State Reference : US

Altitude.AGL.Single Value : 150

## Environment

Flight Conditions : VMC

Weather Elements / Visibility : Thunderstorm

Light : Daylight

## Aircraft

Reference : X

ATC / Advisory.Tower : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : B737 Undifferentiated or Other Model

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Nav In Use : FMS Or FMC

Flight Phase : Final Approach

Route In Use : Visual Approach

Airspace.Class B : ZZZ

## 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 : 43

Experience.Flight Crew.Type : 84

ASRS Report Number.Accession Number : 1834845

Human Factors : Situational Awareness

## Events

Anomaly.Deviation - Speed : All Types

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

Anomaly.Inflight Event / Encounter : Weather / Turbulence

Anomaly.Inflight Event / Encounter : CFTT / CFIT

Detector.Automation : Aircraft Other Automation

Detector.Person : Flight Crew

Were Passengers Involved In Event : N  
When Detected : In-flight  
Result.Flight Crew : Regained Aircraft Control

## Assessments

Contributing Factors / Situations : Weather  
Primary Problem : Weather

## Narrative: 1

Landing XXR ZZZ during gusty conditions, received too low terrain while on short final. Low-level windshear reported on east side of field. Wind gust took airspeed up to 175. Neither pilot flying or pilot not flying saw airspeed go above flaps 30 speed of 175, or any movement in flap retraction due to airspeed. Original flap 30 speed was 147. Added 15 for gust. Reported stable at 500 ft. AGL with 1,000 FPM descent. Gusty conditions from above FAF to 100 ft. AGL, but under control. Largest gust after 500 ft. AGL stable call, approximately 150 ft. AGL. On short final, I thought "too low terrain" was an erroneous warning. Visual conditions from FAF inbound. Touchdown uneventful. Wrote up maintenance discrepancy for possible overspeed due to unusual GPWS warning.

## Synopsis

B737 Captain reported encountering strong gusty winds during final approach and was able to land safely after recovering control.



## Time / Day

Date : 202108

Local Time Of Day : 1201-1800

## Place

Locale Reference.ATC Facility : ZZZZ.ARTCC

State Reference : FO

## Environment

Flight Conditions : IMC

Weather Elements / Visibility : Turbulence

Weather Elements / Visibility : Rain

## Aircraft

Reference : X

ATC / Advisory.Center : ZZZZ

Aircraft Operator : Air Carrier

Make Model Name : MD-11

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Cargo / Freight / Delivery

Nav In Use : FMS Or FMC

Nav In Use : GPS

Flight Phase : Cruise

Route In Use : Direct

Airspace.Class A : ZZZ

## Component

Aircraft Component : Engine

Aircraft Reference : X

Problem : Malfunctioning

## Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Relief Pilot

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Instrument

ASRS Report Number.Accession Number : 1834493

Human Factors : Situational Awareness

Human Factors : Troubleshooting

Human Factors : Distraction

## Events

Anomaly.Aircraft Equipment Problem : Critical  
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy  
Anomaly.Inflight Event / Encounter : Weather / Turbulence  
Detector.Automation : Aircraft Other Automation  
Detector.Person : Flight Crew  
Were Passengers Involved In Event : N  
When Detected : In-flight  
Result.Aircraft : Equipment Problem Dissipated

## Assessments

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

## Narrative: 1

Cruising at Mach .82/FL310, the aircraft entered an area of heavy precipitation. Engine ignition override was on. Crew observed N2 roll back to approximately 35% and received a Level 2 ENG 2 RPM LO. The throttle did not move and all other engine parameters were normal, EGT, oil pressure/temp. There was no yaw. The crew addressed the QRC, but the engine N2 RPM increased back to normal indications before they could run it. The rollback lasted less than 2 minutes. All indications were normal for remainder of the flight.  
Unknown cause.

## Synopsis

MD-11 Second Officer reported encountering heavy precipitation in cruise flight when engine N2 began to roll back with a caution message, leading to no throttle movement.

## Time / Day

Date : 202108

Local Time Of Day : 1201-1800

## Place

Locale Reference.ATC Facility : ZZZ.ARTCC

State Reference : US

Altitude.MSL.Single Value : 35000

## Environment

Flight Conditions : IMC

Weather Elements / Visibility : Hail

Weather Elements / Visibility : Turbulence

Weather Elements / Visibility : Rain

Weather Elements / Visibility : Thunderstorm

Light : Daylight

## Aircraft

Reference : X

ATC / Advisory.Center : ZZZ

Aircraft Operator : Air Taxi

Make Model Name : Beechjet 400

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 135

Flight Plan : IFR

Mission : Passenger

Flight Phase : Cruise

Route In Use : Vectors

Airspace.Class A : ZZZ

## Component

Aircraft Component : Weather Radar

Aircraft Reference : X

Problem : Malfunctioning

## Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : First Officer

Function.Flight Crew : Pilot Flying

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

ASRS Report Number.Accession Number : 1831146

Human Factors : Workload

Human Factors : Troubleshooting

Human Factors : Situational Awareness

## Events

Anomaly.Aircraft Equipment Problem : Critical  
Anomaly.Deviation - Altitude : Excursion From Assigned Altitude  
Anomaly.Inflight Event / Encounter : Weather / Turbulence  
Anomaly.Inflight Event / Encounter : Loss Of Aircraft Control  
Detector.Person : Flight Crew  
Were Passengers Involved In Event : N  
When Detected : In-flight  
Result.Flight Crew : Diverted  
Result.Flight Crew : Regained Aircraft Control  
Result.Flight Crew : Requested ATC Assistance / Clarification  
Result.Air Traffic Control : Provided Assistance

## Assessments

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

## Narrative: 1

When cruising at FL350 and deviating right of course for thunderstorm avoidance on a heading of 075 we began to encounter blow off and overhangs from other cells in the area reducing visibility to IMC. ATC was overwhelmed and could not give us requested higher altitude and due to high traffic in the area we did not initiate a further deviation right of course until we could ask ATC. Our radar was operating and being manipulated by the Captain showing no cells along our route of flight. We did not realize our radar had failed (no cockpit indications) and suddenly we were in a extreme thunderstorm cell. Our altitude deviated considerably 1,500 feet up and 700 feet down from FL350. We encountered light hail extreme precipitation and severe turbulence. Upon exiting the cell we immediately flew towards clear air and made the decision to divert to ZZZ. Suspecting possible negative G limits had been exceeded and concerned about possible aircraft damage. ATC was able to immediately accommodate our diversion and I landed on runway XX at ZZZ without further issue. The radar and possible turbulence damage was written up in the maintenance log and the company notified according to SOPs and Op Specs. Ensure all radars are operational and checked regularly by Maintenance. Also release this incident to the entire pilot group so that they are aware of this possible issue when operating near thunderstorms.

## Synopsis

First Officer reported the aircraft weather radar failed in heavy weather and the flight crew elected to divert to a precautionary landing.

## Time / Day

Date : 202108

Local Time Of Day : 0601-1200

## Place

Locale Reference.Airport : MHT.Airport

State Reference : NH

Relative Position.Angle.Radial : 090

Relative Position.Distance.Nautical Miles : 35

Altitude.MSL.Single Value : 12000

## Environment

Light : Daylight

## Aircraft

Reference : X

ATC / Advisory.TRACON : A90

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 : Climb

Airspace.Class E : A90

## 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 : Flight Instructor

Qualification.Flight Crew : Instrument

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Air Transport Pilot (ATP)

ASRS Report Number.Accession Number : 1829993

Human Factors : Communication Breakdown

Communication Breakdown.Party1 : Flight Crew

Communication Breakdown.Party2 : ATC

## Events

Anomaly.ATC Issue : All Types

Anomaly.Deviation - Speed : All Types

Anomaly.Deviation - Track / Heading : All Types

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

Anomaly.Inflight Event / Encounter : Weather / Turbulence

Detector.Person : Flight Crew

When Detected : In-flight

Result.Air Traffic Control : Issued New Clearance

## Assessments

Contributing Factors / Situations : Procedure

Contributing Factors / Situations : Weather

Primary Problem : Procedure

## Narrative: 1

We had spoken with Dispatch two hours before the flight about the days weather. We agreed on a new route that would work for all parties and operation needs. The route was filed and clearance gave the route to us. In the departure climbout we got a reroute back into the weather; we looked at it and told them unable. ATC said the almighty TMU needed it. We cited our safety concern and they give us a route that was on the border line of legal, we then had no more options with the weather at hand. TMU had plenty of time to be aware of the route, and gave us the clearance. Why should we even flight plan if we are going to get thrown all these curve balls with no recourse in the air. This is a definite safety concern. TMU is too far overreaching.

## Synopsis

Air carrier Captain reported filing reroute to avoid weather, but TMU issued a reroute resulting in an unsafe flight into weather.

## Time / Day

Date : 202108

Local Time Of Day : 1801-2400

## Place

Locale Reference.Airport : PWK.Airport

State Reference : IL

Altitude.MSL.Single Value : 1800

## Environment

Flight Conditions : IMC

Weather Elements / Visibility : Thunderstorm

Weather Elements / Visibility : Turbulence

Weather Elements / Visibility : Windshear

Light : Night

## Aircraft

Reference : X

ATC / Advisory.TRACON : C90

Aircraft Operator : Air Taxi

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

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 135

Mission : Passenger

Flight Phase : Descent

Airspace.Class E : C90

## Person : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Taxi

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 : 1829622

## Person : 2

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Taxi

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 : 1829623

## Events

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

## Assessments

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

### Narrative: 1

ATC given heading for vector for weather and entered cloud with severe turbulence with down draft auto pilot disconnected, and power and pitch up with continued down draft about 1,200 ft. altitude lost and severe turbulence until aircraft was out the cloud, report it to ATC. We were vectored by ATC and we did not see the weather on the radar in IMC.

### Narrative: 2

We were getting vectored by ATC to go around weather and on the final vector before the occurrence we got vectored into a cloud that began to produce moderate turbulence. We attempted to get deviations but could not reach the Controller. It was then that we experienced what we described as a severe downward wind shear that made us lose control of the aircraft and the aircraft had an immediate 4000+ ft. per minute drop in altitude. Autopilot disengaged and we found ourselves at 1800 ft. MSL and I began to slow to maneuvering speed to regain control of the aircraft. Once I did I immediately began a climb and we finally had the Controller provide deviation instructions and we exited the cloud and the turbulence subsided. We had nothing on radar and thought the Controller was guiding us away from thunderstorms but he was not seeing it as well.

## Synopsis

Flight crew reported a loss of aircraft control in severe turbulence.



## Time / Day

Date : 202108

Local Time Of Day : 0601-1200

## Place

Locale Reference.ATC Facility : ZZZ.ARTCC

State Reference : US

Altitude.MSL.Single Value : 37000

## Aircraft

Reference : X

ATC / Advisory.Center : ZZZ

Aircraft Operator : Air Carrier

Make Model Name : B737-800

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 121

Flight Plan : IFR

Mission : Passenger

Flight Phase : Cruise

Airspace.Class A : ZZZ

## Component

Aircraft Component : Air Data Computer

Aircraft Reference : X

Problem : Malfunctioning

## Person : 1

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Pilot Not Flying

Function.Flight Crew : First Officer

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Instrument

ASRS Report Number.Accession Number : 1828895

## Person : 2

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Air Carrier

Function.Flight Crew : Pilot Flying

Function.Flight Crew : Captain

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Instrument

ASRS Report Number.Accession Number : 1828896

## Events

Anomaly.Aircraft Equipment Problem : Critical  
Anomaly.Deviation - Altitude : Excursion From Assigned Altitude  
Anomaly.Deviation / Discrepancy - Procedural : Clearance  
Anomaly.Inflight Event / Encounter : Weather / Turbulence  
Detector.Person : Flight Crew  
When Detected : In-flight  
Result.Flight Crew : Overcame Equipment Problem

## Assessments

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

## Narrative: 1

During cruise at FL370 while deviating for thunderstorms in IMC conditions we encountered an airspeed unreliable condition. After performing memory items we ran the Airspeed Unreliable checklist. While going through the checklist we may have deviated from our assigned FL370 however we don't think we did. While running the checklist the event seemed to end. We continued through the entire checklist to make sure we were aware of all of the possible actions required if the event returned. This event occurred on the same aircraft about 3 weeks prior and maintenance addressed it at that time. I don't have any suggestions as we followed SOP and checklist usage. We don't think we had an altitude deviation but we aren't sure.

## Narrative: 2

During Airspeed Unreliable event at FL370 and IMC, CA (Captain) was pilot flying. Both CA and FO (First Officer) airspeed and altitude were unreliable for at least a minute or more, Airspeed Low and IAS Disagree alerts. Accomplished procedures, and hand flew based on Standby Flight Display. As best we could tell, stayed within +- 200 ft of FL370. Exiting IMC, indications returned to normal. ATC made no comment about altitude. Factors include equipment malfunction and icing. Equipment malfunctions unavoidable

## Synopsis

B737-800 flight crew reported unreliable airspeed and altimeter in IMC conditions. Systems returned to normal after exiting IMC.

## Time / Day

Date : 202107

Local Time Of Day : 1201-1800

## Place

Locale Reference.ATC Facility : E10.TRACON

State Reference : CA

Relative Position.Angle.Radial : 330

Relative Position.Distance.Nautical Miles : 70

Altitude.MSL.Single Value : 8500

## Environment

Flight Conditions : Mixed

Weather Elements / Visibility : Rain

Weather Elements / Visibility : Turbulence

Weather Elements / Visibility.Visibility : 2

Light : Daylight

Ceiling.Single Value : 10000

## Aircraft

Reference : X

ATC / Advisory.TRACON : E10

Aircraft Operator : Corporate

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

Crew Size.Number Of Crew : 2

Operating Under FAR Part : Part 91

Flight Plan : None

Mission : Test Flight / Demonstration

Flight Phase : Descent

Route In Use : None

Airspace.Class E : E10

## Person

Location Of Person.Aircraft : X

Location In Aircraft : Flight Deck

Reporter Organization : Corporate

Function.Flight Crew : Pilot Not Flying

Qualification.Flight Crew : Multiengine

Qualification.Flight Crew : Air Transport Pilot (ATP)

Qualification.Flight Crew : Flight Instructor

Qualification.Flight Crew : Instrument

Experience.Flight Crew.Total : 5400

Experience.Flight Crew.Last 90 Days : 46

Experience.Flight Crew.Type : 470

ASRS Report Number.Accession Number : 1828079

Human Factors : Communication Breakdown

Human Factors : Situational Awareness

Human Factors : Workload

Human Factors : Confusion

Communication Breakdown.Party1 : Flight Crew  
Communication Breakdown.Party2 : Flight Crew

## Events

Anomaly.Airspace Violation : All Types  
Anomaly.Deviation / Discrepancy - Procedural : Published Material / Policy  
Anomaly.Deviation / Discrepancy - Procedural : FAR  
Anomaly.Inflight Event / Encounter : Weather / Turbulence  
Anomaly.Inflight Event / Encounter : VFR In IMC  
Anomaly.Inflight Event / Encounter : CFTT / CFIT  
Detector.Automation : Aircraft Terrain Warning  
Detector.Person : Flight Crew  
Miss Distance.Horizontal : 2000  
Miss Distance.Vertical : 500  
When Detected : In-flight  
Result.Flight Crew : Took Evasive Action

## Assessments

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

## Narrative: 1

[We were] operating in a military restricted area where range rules [were] to remain in VMC. Due to increasing cloud coverage, we had to knock off our planned flight early and began preparing for return to base (ZZZ). The PIC was managing the descent while I managed the checklists. We leveled at 10,000 ft. MSL to stay below cloud deck. We were flying southbound with mountainous terrain to the west. Cloud coverage was along the entire route ahead of us, and a hot restricted area was to the east (with cloud coverage). As a crew, we discussed the forward visibility which we estimated to be about 30 NM from our present location. It looked like some rain showers ahead down the valley, and cloudy conditions over the mountains (with maybe a little better clearance in the immediate direction). On board, radar was not indicating anything appreciable returns, and weather showed just a few pixels of green. As we approached the weather, the PIC said we should turn right as he thought the weather looked better towards the mountains. I stated that the weather ahead looked better in my opinion, as it looked like we would go under some of the rain showers in the valley. PIC said he thought it was IMC ahead, and started turning right towards the mountains. I reiterated that going down the valley was our best option, especially due to the mountainous terrain to our right. He mentioned he has flown in this area hundreds of times and he knew this would be better. I again reiterated that not only were we turning towards mountains, but there was a National Park over there which required us to stay 3,000 ft. above the terrain, and would limit how low we could go to avoid weather. I estimated that going down the valley could have got us as low as 5,000 ft. MSL safely (about 2,500 ft. AGL). PIC stated that going down the valley would be impossible for us to stay VMC and maintained the heading towards the mountains. I told him that I did not see what he was seeing, and he stated it would work fine. As we approached the first ridge the PIC climbed to 11,000 ft. MSL to stay safely above the terrain (although I estimate we needed to be about 13,000 ft. MSL to avoid National Park overflight). As we continued south, we could see that it was closing in and that the bases were getting lower, so the PIC started stepping down in altitude to approximately 8,500 ft.' MSL. At one point, the PIC was getting nervous, and asked me if we should turn around. As I was super focused on trying to stay ahead of the PIC, I told him whatever

you do, do not turn right, as the Terrain display was showing a 10,200 ft. peak while we were descending through about 9,500 ft. MSL. The visibility was becoming much reduced and we entered some light rain showers. As we were navigating mountainous terrain in visibility that was maybe 1 NM at times, the GPWS alerted us to "TERRAIN, TERRAIN" followed immediately by "PULL UP, PULL UP, PULL UP." I immediately called climb-climb-climb. The PIC's only response was to pull back on the yoke (as opposed to our training which calls for disconnect AP (Auto Pilot)/AT (Auto Throttles), pitch to PLI (Pitch Limit Indicator) and max power). I put my hand on the throttles and started to push up about the same time the AT's responded to increasing power. As the climb commenced the Terrain Warning silenced, however we did encounter solid IMC. Shortly after we broke through the line of showers, [we] proceeded back to the airfield [in] VFR. There were multiple opportunities to prevent this from happening. The first and foremost that comes to mind is that as soon as we disagreed on the course of action, we should have entered a hold to discuss it. This would have given us time to regroup and may have resulted in a better decision. Additionally (in hindsight), we could have requested an IFR flight plan back to the landing airfield per the range rules. However, we were so focused on remaining VMC that we overlooked that option, probably due to task saturation. Personalities and organizational culture are also paramount to conducting safe flight operations, and these subjects will be presented to leadership as a result of this incident.

## Synopsis

Corporate aircraft pilot reported flying VFR and entering IMC over mountainous terrain resulting in GPWS alert and evasive action taken in order to return to VFR flight.