NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Washington, D.C. 20594

October 10, 2018

Attachment 1 – Flight Crew Interview Summaries and Statements

OPERATIONAL FACTORS

DCA16IA215

Interviewee: Lance Michael Scharkey
Date: August 26, 2016
Location: Teleconference
Interview Time Start: 1009 EDT

Via Telephone: Shawn Etcher (NTSB), James Shelor Federal Aviation Administration (FAA), Andrew Averna (JetBlue), and Marshall Ekstrand Airline Pilots Association (ALPA)

First Officer Scharkey was represented by Erin Shields, Senior Relations Counsel for ALPA

During the interview, First Officer Scharkey stated the following:

His name was Lance Michael Scharkey, and he was 38 years old. His current position was First Officer on the Airbus A320/321 aircraft based at JFK[1]. His date of hire with JetBlue was March 18, 2015. He has been a first officer for the entire time at JetBlue and he has been a line pilot for about a year. He estimated his total flight time was about 5,700 hours and about 700 of those hours were in the A320.

He had an airline transport pilot certificate for airplane multiengine land and a commercial pilot certificate for airplane single-engine land. He had a type rating in the A-320 and EMB-145[2] aircraft. He also held a flight instructor certificate which he maintains.

He had a first-class medical certificate that was issued on March 7, 2016.

He has never been involved in an aircraft accident before nor has he ever been fired or terminated from any employment.

At the time of the event he was the pilot monitoring and the captain was the pilot flying.

His background included being a crew chief on a DC-9[3] while in the Air Force. After leaving the Air Force he received training at a local flight school in St. Louis for his ratings and subsequently was a flight instructor for about 100 hours. At which time he was offered a job flying a Lear jet for a company out of Minnesota, then flew for Royal Air freight flying an EMB110[4]. Following that he was employed at Trans States Airlines and left in 2009 for a non-flying job opportunity. After about 5 years he applied and was hired by JetBlue.

When asked how he communicates concern at JetBlue he stated that there is the ASAP[5] program as well as a company formal safety reporting system. He has used the ASAP system but not the formal safety reporting system. He felt that ASAP really improved safety and training. He

[1] John F. Kennedy International Airport, New York, New York
[2] Embraer S.A. EMB-135, ER, EMB-135LR, EMB-135KE, EMB-135KL, EMB-135BJ, EMB-145, EMB-145ER, EMB-145MR, EMB-145LR, EMB-145XR, EMB-145MP, EMB-145EP. Source: FAA Order 8900.1 Figure 5-88.
[3] The Boeing Company DC9-11, DC-9-12, DC-9-13, DC-9-14, DC-9-15, DC-91-15F, DC-9-21, DC9-31, DC-9-32, DC-9-32F, DC-9-33F, DC-9-34, DC-9-34F, DC-9-41, DC-9-51, DC-9-81, DC-9-82, DC-9-83, DC-9-87, MD-88, MD-90-30, 717-200
[4] Embraer S.A. EMB-110P1, EMB-110P2. Source FAA Order 8900.1 Figure 5-88
[5] Aviation Safety Action Program

considered it an excellent program and pilots are willing to report on things in order to improve safety.

His chain of command at JetBlue consisted of a Chief Pilot or a fellow mentor pilot, Director of Operations and then the Vice-President of Operations.

He considered staffing at JetBlue as most other pilots at other airlines, in that they could always use more pilots but never felt pressured for a lack of staffing. He had only been extended one time when he was on reserve.

For the accident flight, they had a dispatcher assigned to the flight. Typically, the captain will interact with the dispatcher as that is how it is trained. However, he felt that all discussions with dispatch were transparent and that he could also communicate with the dispatcher if needed. Typically, the captain will send and receive messages from the dispatcher but he has never had a captain not share the information with him.

Prior to departure, he thought, the captain had contacted dispatch prior to the flight and confirmed a few things; however, he could not recall when that took place. The dispatch release is always available to both crewmembers. He felt the weather accuracy was straight forward but does not consider it "iron clad." They have WSI[6] weather function on their iPad and he felt that was the best for their weather. The function is available almost 100 percent of the time on the ground and depending on coverage in the air, will be available in the air as well. Usually flying over land they have coverage; however, over the water not as much consistency. He considers WSI as his normal "go to" weather while enroute. He had utilized WSI on the ground and while enroute for the incident flight. He felt it gives a great picture of the weather. He said they can use it going into the weather but most crews use a combination of WSI and the on board radar. He felt the on board weather radar was the most accurate and they utilized it on the incident flight.

He has not flown with the incident captain previously. The crew met at the airplane, then conducted a quick briefing with the crew and provided a "big picture" while still at the gate waiting to board the airplane. He conducted the preflight checks on the exterior of the airplane. Then once inside the cockpit they conducted a standard departure briefing. He felt everything "went like clockwork" and there was no feeling of being hurried or compressed. There were no concerns on this flight as compared to other flights. They had to do some deviating during their flight but the seatbelt sign was off for a little while. They queried Air Traffic Control (ATC) about climbing to FL340[7] as they thought that it may have been a little smoother than FL320. ATC informed them that ride was better at FL320, which they maintained. The radar was showing some precipitation near the Crazy Woman VOR[8]. The captain contacted the cabin crew about the weather ahead and turned on the seatbelt sign. They were flying through some areas of precipitation that was green in color on the weather radar and as they exited the area of weather, they encountered the turbulence. When they exited the weather they were able to see a cumulonimbus cloud in front of them and they requested a left deviation, which was approved by

[6] Weather Service International Corporation also known as The Weather Company

[7] Flight Level 340 which is the altitude above sea level in hundreds of feet (i.e. FL340 is 34,000 feet above mean sea level) with standard atmospheric pressure of 29.92 inches of mercury

[8] Very-High Omnidirectional Range

ATC. During the turn they went through the edge of the cumulonimbus, but it did not look "abnormal" until they impacted the turbulence. During the turbulence event the autopilot turned off and it felt like they went up and then dropped. It happened very quickly and maybe lasted 5 to 10 seconds.

Once they regained control of the airplane the captain called "positive control" to verify he had control of the airplane. He contacted ATC but could not recall what nomenclature he used when talking to them.

He had gone through turbulence before but this was different than anything he had ever been through. Shortly following the turbulence encounter, and after they were in control of the airplane. The captain then decided to verify that everyone was safe and transferred control to him. Utilizing the All Call function, the captain contacted the cabin crew in order to assess the cabin status. A flight attendant reported that two of the flight attendants were injured and one had a head wound. The captain made the decision to go to the cabin to make sure the cabin crew and passengers were okay. He had suggested requesting assistance from the passengers to see if there were any medical personnel on board; however, the captain elected to go to the back anyway. Prior to leaving the cockpit the captain made the decision to divert to the nearest suitable airport, to which he [the first officer] notified ATC.

During the turbulence encounter the autopilot system had disengaged and he could not re-engage the autopilot. Although not certain but thought he was able to re-engage the autopilot about 10,000 feet or so. During the time the captain was out of the cockpit he had been hand flying the airplane, while trying to communicate to ATC. He attempted to set up for the divert to Rapid City; however, could not reach some of the needed information as he was hand flying the airplane.

Once the captain returned to the cockpit, it helped relieve some of the workload. The captain elected to take over the communication and allow him [first officer] to continue flying the aircraft. Around the time of the event there was a lot of rain "pelting" the windshield and radio communication was "terrible."

Once the autopilot was re-engaged they performed the diversion checklist. The captain was busy so he [first officer] just reviewed it. They conducted the top of descent checklist which he thought they may have expedited the checklist. Primarily he did not communicate with ATC as he was more concerned with flying the airplane, but once the captain returned the information was relayed to ATC.

The captain was "deeply concerned" and could not believe that the event had happened. He confirmed with the captain that they used their experience and asked the captain to wait until on the ground to discuss, so they could concentrate on getting everything finished and on the ground.

After they landed at Rapid City, he felt that the airport did a great job handling their diversion. He and the captain determined that they were not going to leave the airport until all of the passengers were taken care of.

When asked when the captain had turned on the seatbelt, he stated the it was simultaneous as he talked to the passenger. The captain then called the cabin crew and told them to take their seats, he felt there was no ambiguity. He could not recall the amount of time prior to the event that the seatbelt sign was turned on but felt it was a “comfortable block of time” and maybe 10 to 15 minutes prior.

Since the captain was the flying pilot, he had observed the captain reduce speed when they were flying in chop but could not recall the exact speed.

He reported that both he and the captain were manipulating the radar during the flight. He knows he used multiple ranges but not certain of the exact ranges he used. He also adjusted the tilt angle and thought it was between 0.5 and 0.1 degrees down and maybe as much as 2 degrees down and about 1.5 degrees up. He typically will use the 40 and 80 mile range but he could go out to 160 miles. The weather that the radar was painting was green in color, indicating light precipitation. The radar was also indicating some weather south of them but at no time did they go through any yellow or red radar returns.

The park position on the radar gave them between 10 and 30 percent ground return. He felt that sometimes it could be “tricky” but he was just trying to learn the radar during the flight and was comparing the radar information with what he saw on the WSI app.

The weather radar has a forecasted windshear and there is a switch on the radar that they utilize. The weather/turbulence setting is in the on position for departure but he could not recall if it was ever turned off or if they left it on for the incident flight.

He had heard other flights on the frequency requesting climb or descent and maybe some reports of light chop but they had no indication with any other aircraft that there was severe turbulence ahead or any recommendations from ATC.

Following the turbulence encounter the radios were completely “terrible” and felt it was maybe a 1 by 5 for clarity. He could hear little snippets of voice communication but he was not able to ascertain what was stated clearly. Prior to the event they exited the cloud when they saw the cumulonimbus ahead of them and requested the deviation, following the event they went back into heavy rain.

From what he could recall, the weather was north of their course. They had deviated around a couple of areas of weather that was on their left side but nothing close to them.

There was no radar attenuation that he could recall.

He could not determine why, following the event, he could not re-engage the autopilot. Looking through the manuals after the event, he recalled that the captain had called for autopilot 1 to be turned on and declare the emergency. He only tried autopilot 1 and did not try autopilot 2. As they descended and everything started to “settle down” he was able to re-engage the autopilot on autopilot 2.

When asked to clarify when the captain left the cockpit, he stated that prior to exiting, the airplane was completely under control. He had recommended to the captain to make a call to see if there were medical personnel in the back; however, the captain did not request it prior to leaving the cockpit. Prior to leaving the cockpit the captain called for the autopilot to be engaged. After the captain returned it was communicated that he [first officer] was hand flying the airplane as the autopilot would not engage.

The captain made the decision to have the first officer fly the airplane and they both felt that was a great way to maintain continuity.

He further wanted to clarify that the weather radar was set to windshear.

To clarify the weather when they broke out of the clouds and saw the build-up and deviated to the left. Following the turbulence encounter they were in instrument meteorological conditions for about 30 to 60 seconds. After that they were in clear skies until the descent into Rapid City at which point they were given vectors around some precipitation.

During the cruise portion prior to the turbulence encounter, they did have the option to deviate around all of the weather. However, considering that no other airplanes were deviating, they received no message from dispatch suggesting they deviate, and everything else they had, they determined that it would be fine to navigate through the green returns on the radar. At no time did they have any magenta returns on their radar screens that was on their flight path.

He felt that he was well rested when he started the trip the day prior and he had commuted into JFK the day prior to the trip start and slept at his "crash pad". He had a few issues at home when it came to dealing with their rental property but nothing of concern. He reported the day of the event in Baltimore well rested, for their deadhead flight to Boston and then the incident flight. He felt that the trip was a great trip and that the crew were all "gelling" well. The pairing was a 4-day pairing and the incident occurred on day 2.

He usually eats well, runs a lot, and drinks a lot of water. The day of the incident he reported for duty about 1320 or so. Once in Boston he had time to grab a sandwich before the incident flight.

He felt that the ATC system is archaic and that PIREPs[9] are a dying breed and wished that more pilot would contribute to the PIREPs. He likes the electronic charts that they have; however, when the autopilot was not reconnecting and he was hand flying with his right hand on the sidestick it was a lot of work to try and access the iPad with his left hand. He hoped that someone will develop a simplistic iPad function such as a divert button that could be used. He also felt that it was hard to know how a crew will judge the distance from a storm or anything and it is nice when he has flown with a captain previous and can understand the experience level.

When asked if he could recall if JetBlue had a policy about distance from a storm cell, he stated that the "school house" approach was more distance from a storm is better and that not always

[9] Pilot Reports

would the FAA standard of 20 miles be enough as there could be blow out and overhang from a cell.

The interview ended at 1148 EDT.

Interviewee: Captain Michael Henry Connery Jr.
Date: August 26, 2016
Location: Teleconference
Interview Time Start: 1301 EDT

Via Telephone: Shawn Etcher (NTSB), James Shelor (FAA), Andrew Averna (JetBlue), and Marshall Ekstrand (ALPA)

Captain Connery was represented by Erin Shields, Senior Relations Counsel for ALPA

During the interview, Captain Connery stated the following:

His name is Michael Henry Connery Jr. He is 54 years old. His current position was a captain on the A320 airplane at JetBlue and he was based at JFK. His date of hire at JetBlue was March 5, 2009. He has been a line pilot since he transitioned to the A320 aircraft except for July, which at that time he was unable to hold a line. He has an Airline Transport Pilot (ATP) certificate for airplane single-engine land, airplane single-engine sea, airplane multiengine land, airplane multiengine sea, rotorcraft, with commercial pilot privileges in glider. He also has a type rating in the Airbus A-320, Embraer EMB-145[10], ERJ-170, and ERJ-190[11]. He has never been a check airman at JetBlue or any other employers.

He had been a captain on the EMB190 for a year and then in October 2015 he transitioned to being a captain on the A320 and conducted his IOE on November 10, 2015.

He estimated about 10,000 hours of total flight experience and of those hours he estimated that he flew about 100 hours a month since his transition to the A320. He has a First-class medical certificate which was issued on May 20, 2016. He has a restriction of that he must wear glasses for near vision, which he was wearing at the time of the incident.

He has had one accident previous back in August 25, 2000, while performing his duties as a certificated flight instructor (CFI) in a Piper Seminole aircraft. During that event he was conducting a single-engine demonstration and the student he was flying with turned the fuel selector on the operating engine to off. He ended up ditching in a lake.

[10] Embraer S.A. EMB-135, ER, EMB-135LR, EMB-135KE, EMB-135KL, EMB-135BJ, EMB-145, EMB-145ER, EMB-145MR, EMB-145LR, EMB-145XR, EMB-145MP, EMB-145EP. Source: FAA Order 8900.1 Figure 5-88.
[11] Embraer S.A. ERJ 170-100 STD, ERJ 170-100 LR, ERJ170-100 SU, ERJ 170-100 SE, ERJ 170-200 STD, ERJ 170-200 – LR, ERAJ 170-200 SU, ERJ 190-100 STD, ERJ 190-100 LR, ERJ 190-100 IGW, ERJ 190-100 ECJ, ERJ 190-200 STD, ERJ 190-200 LR, ERAJ 190-200 IGW. Source: FAA Order 8900.1 Figure 5-88

He started flying recreationally in college and then did not fly for a while after that. In his 30's he elected to make flying a career and became a CFI at a flight school in New Jersey, where he instructed for about 2 years. He then was hired by Executive Jet Management as a First Officer in the Beech King Air 200. Then he was hired by Climax air out of Teterboro, New Jersey flying caravans. Subsequently he was hired by Millionaire at Teterboro as first officer in the CE560 Ultra aircraft. Following that he was hired by Mesa Airlines as a first officer in the EMB-145, then hired by JetBlue as a first officer in the EMB190 until September 2014, at which time he upgraded to captain on the EMB190 for about a year then transitioned in October of 2015 to the A-320.

As a captain on the A-320 his chain of command at JetBlue is the Chief Pilot's office, Vice-President of Flight Operations, the training center in Orlando, and then the fleet captain. He described staffing at JetBlue as adequate. He has only been extended one time while being employed at JetBlue which occurred about 6 to 7 months prior to the incident flight.

If he had a concern with anything, he could file a safety report, go to the Chief Pilot's office, contact a safety pilot, or contact an ALPA representative. If he had a concern and reported it the feedback, he might receive would be for the appropriate person to contact him via phone or email; however, has never had a concern before.

He could refuse a flight for any reason from mechanical, safety, fatigue, etc. and he felt the airline would be understanding. He has never cancelled a flight "out right" but has had them cancel for various reasons after talking with dispatch.

For the incident flight they had a dispatcher assigned to them but he did not communicate with the dispatcher while on the ground or prior to the event. He felt that the dispatch release he received was adequate to conduct the flight and provided him with what he needed.

He had not flown with the first officer on any previous trips.

He met the first officer for the first time and introduced himself. Normally, he tries to gauge the experience of the first officer and if it is a low-time first officer, which his first officer on the incident flight was not a low time first officer. He felt everything was business as usual and remembered the first officer had the weather up and they discussed how they would probably need to deviate while enroute. He conducted the standard brief up to the line on the before start checklist. They received their numbers and passenger count and pushed back form the gate on time. After they departed they climbed to FL320 and about an hour to 90 minutes prior to the turbulence encounter they deviated some for the weather. Both he and the first officer were utilizing the radar and able to paint all the weather, the ride was smooth with a little light chop. The first officer suggested a climb to FL340 for a better ride; however, ATC advised them that the ride would be worse at FL340. They both determined it would be better to remain at FL320. He had been cycling the seatbelt sign on and off for the flight as they would encounter a little light chop. The radar was painting weather as green on the radar and ATC told them that there was moderate precipitation ahead. He called the cabin crew, told them to stop service and fasten their seat belts while also illuminating the seatbelt sign for the passengers. They entered a haze layer but observed weather by the Crazy Woman VOR on their radar. When the flight emerged

from the haze they saw a buildup and requested a deviation to the left, which was approved. During the turn to the left, there was nothing they could see behind or to the left and the edge of the buildup appeared to be deteriorating. However, as soon as the touched the edge of the buildup the encountered the turbulence. The turbulence was "very violent and very quick." The airplane went up and then went down very quickly and the autopilot disconnected at which time he took control of the airplane manually. Once the turbulence was over he conducted a series of climbs and descents to check for flight control authority, which all appeared to be "normal." In the descent from FL320 to FL310 he commanded the first officer to engage the autopilot.

He elected to contact the cabin crew; the F2[12] was hysterical and thought she had broken her ankle. The F3 had a head wound and the F1 was also injured. He transferred control to the first officer, and commanded him to declare an emergency and divert to Rapid City. He then decided to exit the cockpit. The flight attendants were in the aft galley and while headed towards the aft end of the airplane he located a medical doctor and an emergency room nurse. The flight attendant had lacerations over her right eye and he felt that the cabin crew was in proper care. As he went back toward the front of the cabin he made an announcement to the passengers explaining their diversion plan to Rapid City and then went back into the cockpit. Prior to leaving the cockpit he and the first officer had made plans to divert to Rapid City and when he returned to the flight deck he sent a message to the company, and worked with ATC for vectors to Rapid City. As they were approaching Rapid City, the first officer noticed the doctor was still up moving around and they requested vectors in order to provide the doctor a chance to sit down. The first officer conducted the landing at Rapid City and the airport was in visual conditions.

After they landed they were given the option to remain on the taxiway or taxi to the gate. He elected to go to the gate as they had ambulances standing by. After they blocked in he returned to the cabin, took count of everyone that was injured and made a list of those that needed or wanted to go to the hospital. He then provided that list to the EMTs[13]. They remained at the airport for about 6 to 8 hours longer answering questions and making sure that their passengers were taken care of. JetBlue had sent a "rescue aircraft" to pick up the passengers and continue to their final destination. He had two unaccompanied minors that he escorted to the "rescue aircraft." They then went to a hotel for rest and the next day ferried the airplane to Long Beach then flew as a deadhead crewmember to JFK.

They had the radar on the entire flight; however, he could not recall the exact tilt angle. His habit is to adjust the radar until he "finds the tilt angle" that does what he feels is a good job. Once he finds the good tilt angle he leaves it, which is usually set between 0- and 5 degrees tilt up. He recalled seeing the first officer using the tilt but not recall the number that the first officer was using. The range is always adjusted while in flight and, although could not remember exactly, thought that it was probably between 60 and 240 miles. Since the radar was painting the weather over the Crazy Woman VOR he felt it was set correctly. He does not set the radar to have any ground returns as that clutters the screen.

Prior to the turbulence encounter the ride, he felt, was smooth but to be on the conservative side he turned the seatbelt sign on for several minutes prior to the encounter with the turbulence. He

[12] Designator code for flight attendant position/station for the flight

[13] Emergency Medical Technician

spoke directly with the cabin crew as he generally finds that when he is flying the first officer makes the announcement and when the first officer is flying he makes the announcement; however, when talking to the cabin crew the cabin call button is on his side of the airplane so he talks to them.

JetBlue's philosophy is that either pilot can use the radar. However, once he finds the "Sweet spot" he leaves the tilt there unless there is a reason to adjust it such as going up or down in elevation. As far as using the Auto or Manual tilt function he felt that depends on the situation he is in. For an example while flying down near Florida he was manually adjusting the tilt but elected to select auto for it to find the correct angle.

He felt the training on the weather radar is very good and the radar is covered in all phases of training. There is an entire section for radar usage.

The ATC frequency he felt was "unusually quiet" and he only heard one other airplane, that he thought was another JetBlue flight behind them. There were no PIREPS he heard, nothing from ATC, no turbulence report, just a normal day.

Usually ATC is very consistent with providing flight crews with information when there is something to report.

When asked what he told the cabin crew when he told them to take their seat he stated that it could be a little bumpy for the next couple of hundred miles but was not really concerned.

After they encountered the turbulence and he regained control of the airplane he commanded the first officer to engage the autopilot; however, could not recall if it was engaged or not.

When he made the decision to leave the flight deck the flight was in visual condition and there was nothing in front of them. He elected to go to the cabin as he heard passengers screaming and was concerned that no one would be able to hear him. When he went to the back and passengers saw him everything "calmed down," which he assumed was because the passengers saw a pilot. As he walked toward the back of the airplane he asked passengers if they were okay and that was when he located the doctor and the nurse.

When he transferred control to the first officer and prior to leaving the flight deck he felt that the first officer workload was adequate. After he returned to the cockpit he discussed with the first officer what the condition was that he found in the cabin. The first officer had declared the emergency and was diverting to Rapid City. They started setting up for the approach and did the standard checklist. Although they were close to being overweight they were still okay at 141,000 pounds. The weather at Rapid City was "good."

He decided, after returning to the flight deck, that since the first officer was flying he would take over the pilot monitoring duties. It was his decision and the first officer agreed with it.

When asked about when ATC pointed out light to moderate precipitation to them the radar was painting green where the weather was, except over the crazy woman VOR which was about 150 miles beyond where the event took place.

He could not recall how much time prior to the turbulence encounter he turned on the seatbelt sign but thought it was less than 20 minutes prior to the turbulence encounter.

As they approached the area where they encountered the turbulence there was no magenta along their flight path being painted on the radar.

He recalled that the weather radar was on and the weather/turbulence was selected which would provide them with turbulence within 40 miles. That was an automatic function of the system.

He reported for the 4-day paring on the 10th of August at 1320. The report time on the day of the incident was at 1340 which was a deadhead to Boston from Baltimore. The incident occurred on day 2 of the 4-day pairing. He felt fine and rested for the pairing and on the 9th he was on an off day as he had finished a 4-day pairing on the 8th of August.

There is a leadership course provided to new captains at JetBlue called “Leading Edge” however, it is not part of the training and as a captain you have to schedule it. He had conducted this training.

He did not notice any communication issues with the first officer nor with ATC. He classified everything with ATC as “smooth.”

He had no indication that the turbulence would occur and felt that he and the first officer did what they could to try and detect any weather as well as following the encounter with the turbulence.

Interview Ended at 1416 EDT.

From: [redacted]
Sent: Wednesday, August 17, 2016 11:47 AM
To: [redacted]
Subject: Re: F429 Statements Requested by the NTSB

Safety Report

Our pre-flight brief was standard and included possible deviations for weather.

While cruising at FL320, we successfully avoided build ups using various tilt angles and requesting deviations from ATC, experiencing nothing more than light chop. Also, we requested FL 340 to get above weather, but were told by ATC that conditions at that altitude were light to moderate chop - worse than what we were experiencing.

At approximately 150 nm east of Crazy Woman (CZI) VOR, ATC advised us of moderate to heavy precipitation ahead. We did not receive hazardous weather advisories or PIREPS alerting us to significant weather, and were painting nothing more than green on our radar as we entered IMC conditions. However, our radar painted a buildup directly over CZI, and we discussed our plan to deviate.

I turned the seatbelt sign ON, and used the ALL Cabin Call to request that the flight attendants take their jumpseats for approximately 200 nm for what we expected to be light-to-moderate chop. Upon exiting IMC conditions, we saw a buildup ahead of us, and initiated a left turn to the South after receiving ATC clearance. We barely clipped the edge of the buildup that had minimal vertical or lateral development, and immediately encountered severe turbulence.

The AP disconnected, and I took control of the aircraft as we gained and lost approximately 2000 ft. and 500 ft, respectively. I maintained wings level while accepting altitude changes. Once clear, I initiated a gentle climb and descent to assess my elevator authority, then requested that the FO set FL 310 and AP 1 ON.

I transferred control to the FO, asked that he declare an Emergency and that he request vectors to the nearest suitable airport, which was Rapid City (KRAP), approximately 50 nm from our position.

I proceeded to assess the situation using the ALL Cabin Call, and realized that I had an emergency in the cabin: the F2 had hurt her ankle badly, could not walk, and alerted me that the F3 had sustained a serious head injury with significant bleeding. After confirming that we were clear of weather and that the FO had control of the aircraft, I exercised my emergency PIC authority and left the cockpit after requesting that the F1 set up. The FO remained alone in the cockpit.

My decision to leave the cockpit was based on my concern that the F3 needed immediate medical attention, and that an announcement from the cockpit summoning medical personnel would have been ineffective given the disruption in the cabin.

As I walked down the aisle, I summoned a doctor and an EMT nurse to follow me to the aft galley. After determining that the F3 was responsive and under proper care, I returned to the front of the cabin and made a PA announcement asking if everyone was okay, and making sure that everyone felt reassured that we would divert safely to Rapid City.

Then I returned to the cockpit, where I sent company an ACARS message and acted as PM while the FO successfully flew the airplane to KRAP and landed on RWY 32 without further incident.

Sent from my iPad

[redacted]
JetBlue Airways
First Officer / Airbus 320-321
JFK T-5
[redacted]

NTSB Safety Report

JBU429 Boston-Sacramento

All phases of JBU429 leading up to the turbulence event were completely normal and seamless with regard to preflight, briefings, cabin preparation, push back, taxi, takeoff, and the initial enroute phase of flight. Multiple successful weather deviations up to the turbulence event were made based on available radar, SOC input, WSI, and ATC information, the exact same information as when we experienced the unexpected turbulence phenomenon. The turbulence event occurred level at FL320 at approximately 125-150 nm east of Crazy Woman VOR (CZI).

Summary leading up to and including the event:

The Captain advised the cabin as well as the inflight crew to take their seats for the next 200 miles for an area of weather on route of flight and the seat belt sign was placed in the “ON” position. The radar painted green on route (multiple tilt angles were utilized) as we encountered IMC conditions. After breaking out of an area of wide spread precipitation we both concurred to deviate around two particular build ups directly in front of us (which given our closure rate allowed a short time to turn).

Based upon our collective judgment, we turned left to deviate and clipped the edge of a buildup that was estimated at no more than 500 ft. above our current altitude. Anticipating potential moderate bumps but nothing more, the autopilot disconnected. The aircraft promptly gained approximately 2000 feet and then immediately descended 500 feet respectively. Following this, the captain called out positive control of the aircraft and initiated a gentle climb followed by descent after the aircraft stabilized to check for elevator/ aileron control.

After doing so, the Captain’s judgement was that the aircraft was safe to fly, he transferred positive control to me, describing exactly what control inputs were made. He then proceeded to contact inflight with the “ALL” cabin call function. A positive communication chain was established, an inflight crew member said that 2 flight attendants had sustained injuries, one to the ankle, and another with a head injury that was bleeding. The Captain felt that given the circumstance of two incapacitated inflight crew members, he would exercise Emergency PIC authority and exit the flight deck to assist the sustained injuries in the cabin.

Prior to him leaving the flight deck, I recommended that we attempt to call for medical professionals in the cabin to seek possible assistance from them. The Captain’s final decision to exit the flight deck was strictly based on expediting the assessment of a potential life threatening head injury as well as potential injuries to our customers, thus, limiting our help from potentially qualified medical professionals within the cabin.

Before exiting the flight deck, the captain called for “FL310, AP1 on, and to declare an emergency while proceeding to the nearest suitable airport.” In that order, I proceeded accordingly, I attempted to reengage Autopilot 1 without success and continued to fly via manual control. I initially held the attitude that we arrived at (FL335) following turbulence to stay clear of all additional precipitation and surrounding clouds. Radios were very broken and unreadable at the time of control transfer (1x5 clarity), However, after several radio transmissions, I was able to communicate our intentions shortly thereafter and requested vectors for the

nearest suitable airport which was KRAP (70 miles from our location). I was then given an immediate descent and vector and told to expect runway 32 into KRAP.

Manual manipulation / control of the aircraft didn't allow for anything but flying and communicating on my behalf from the time the Captain exited the flight deck until he returned. When the Captain returned to the flight deck we exchanged details, in order to continue expediting progress toward KRAP, I continued to fly while he communicated injuries, souls on board, and fuel to ATC. At this time, we were also able to get the Autopilot reengaged, he sent an ACARS message to SOC, pulled Aero Data, and programmed the FMS for the approach into KRAP. We proceeded via ATC instruction without any further incident and requested Medical support to be standing by at the gate.

The only thing we had to execute that was out of our normal flight pattern toward KRAP was one additional circle above and around the airport as we had souls on board that hadn't secured themselves in their seats (I confirmed this via video monitor in the flight deck recording in the cabin). The circling procedure allowed us time to confirm via the camera that all were seated/secured. We then executed the ILS approach to runway 32, taxied straight to the gate without delay and or incident where medical Triage was standing by.