

NATIONAL TRANSPORTATION SAFETY BOARD
Office of Aviation Safety
Washington, DC 20594

HUMAN PERFORMANCE

GROUP CHAIRMAN'S FACTUAL REPORT

April 19, 2022

I. ACCIDENT

Operator: CommutAir
Aircraft: Embraer E145, N14171
Location: Presque Isle, Maine
Date: March 4, 2019
Time: 1129 eastern standard time (EST¹)
NTSB #: DCA19FA089

II. PARTICIPANTS

Group Chairman: Katherine Wilson
(co-chair) National Transportation Safety Board (NTSB)
Washington, DC

Group Chairman: Marvin Frantz
(co-chair) NTSB
Washington, DC

Member: Patrick Hempen
Federal Aviation Administration (FAA)
Washington, DC

Member: Zack Barrett
CommutAir
North Olmsted, Ohio

Member: Cory Hamernik²
Airline Pilots Association (ALPA)
Herndon, Virginia

¹ All times are eastern standard time (EST) unless otherwise noted.

² On May 10, 2019, Nicholas Biondo replaced Cory Hamernik as the ALPA Operational Factors/Human Performance group member.

III. SUMMARY

On March 4, 2019, about 1129 eastern standard time, CommutAir flight 4933, dba United Express, an EMB-145XR, registration N14171, landed at Presque Isle Airport (KPQI), Maine, to the right side of the runway 01, in light to moderate snow. On board were the captain, first officer, one flight attendant, and 28 passengers. Two passengers and one crewmember received minor injuries, and the airplane received substantial damage. The regularly scheduled domestic passenger flight was operating under the provisions of 14 Code of Federal Regulations Part 121 from Newark International Airport (KEWR), Newark, New Jersey.

IV. DETAILS OF THE INVESTIGATION

The Operational Factors/Human Performance Group was formed on March 5, 2019. On March 7, the group conducted telephone interviews with the accident captain and first officer (FO). On May 20 and 21, the group traveled to CommutAir headquarters in North Olmsted, Ohio, and conducted interviews with the vice-president of flight operations, the director of operations, the director of flight operations training, the chief pilot, the managing director, the safety program manager, and the manager for regulatory compliance / FOQA³ manager. Additionally, personnel documents and company manuals were obtained from CommutAir, and flight crew medical and certification records were obtained from the FAA.

V. FACTUAL INFORMATION

1.0. Crew information

1.1. The captain

The captain held a first-class FAA medical certificate dated May 10, 2018, with no limitations. She did not wear glasses and had no hearing issues; she took no prescription medications, just vitamins.

The captain was placed on “increased scrutiny” twice in September 2017⁴. According to the CommutAir director of flight operations, an “increased scrutiny” stamp was placed on the training item in the pilot’s training file that needed to be accomplished for the pilot to get off the increased scrutiny list.⁵ Training records dated March 6 and 8, 2018, were stamped “Increased Scrutiny”; the training was completed successfully. During her most recent LOFT on May 18, 2018, the instructor commented regarding a divert situation “They delegated duties well for coordinating with ATC, dispatch and FA. Very thorough and concise decisions. Nice job!!” She received satisfactory ratings on CRM and judgement during her most recent proficiency check on August 18, 2018, and satisfactory ratings on crew coordination, situation awareness and judgment during her most recent line check on September 12, 2018.

She had not been involved in any accidents or incidents previously.

³ Flight Operations Quality Assurance.

⁴ September 22, 2017 – additional simulator lesson needed above required program hours not to include the LOFT or proficiency check; September 26, 2017 – failure of proficiency check.

⁵ See section 3.1 of this report.

1.1.1. The Captain's Pre-accident Activities

On Friday, March 1, 2019, the captain was working; her report time was 1115. She flew three legs and finished in Newark at 2044. She commuted to Atlanta and got home around midnight. On Saturday, March 2nd, she was pretty tired from the night before and could not recall when she woke up. She was off duty and only left her house for dinner that night; she went to bed a little earlier, maybe around 2300 or so. On Sunday, March 3, she was off duty and thought she woke up about 0700. She went to church that day and later commuted to Newark, arriving at the hotel about 2200. She thought she went to bed about 2330. There was a delay getting to the hotel after arriving because she had to confirm which hotel she was staying at. On March 4, she had her alarm set for 0700 and took the 0800 van to the airport; her show time was 0830. She had coffee and a power bar for breakfast. She slept well that night and had no problems falling asleep or staying asleep; she felt great when she woke up Monday. She and the FO had normal chitchat on the way to the airport.

She had no sleep disorders or sleep issues and did not use tobacco. She used alcohol sometimes. Her last use before the day of the accident was one beer sometime the week prior with her FO on a long layover. In the 72 hours prior to the accident, she had taken Tylenol and used a nose spray on Friday night, but no other prescription or nonprescription medications.

1.2. The First Officer

The FO, age 51, was hired at CommutAir was May 17, 2018. He had a first-class FAA medical certificate dated October 9, 2018, with the limitation "Holder shall possess glasses for near/intermediate vision"; he had no issues with his hearing. His FAA medical records indicated he was not at risk for obstructive sleep apnea. The first officer reported during a post-accident interview that in 2006, he completed a sleep study and had a procedure performed to stop his snoring. That procedure was not successful and when he retired, he was offered a CPAP⁶ machine which he was using at the time of the accident for snoring; details of his CPAP use can be found in the Medical Factual Report for this investigation.

He had not been involved in any accidents or incidents previously.

1.2.1. The First Officer's Pre-accident Activities

He never missed work for being sick until the trip before the accident flight. He called and told the company he could not continue the trip and to put him on the sick list; he thought that was Saturday, February 23. He flew home, arriving about 1800-1830 and went to a walk-in clinic. He tested positive for the flu and was given prescription medications including a 5-day Zpack. He had to fly on Monday, March 4, and asked the doctor if he would be better by then. By Sunday, March 3, he felt much better. He finished his last pill on Monday, March 4, when he came back to work.

On Sunday, March 4, 2019, he commuted from his home in Palm Beach, Florida, to Newark because he was flying the first flight of the day on Monday. It was the company's policy for a commuting pilot to have 2 flight options. He chose a United flight arriving between 1700-

⁶ Continuous positive airway pressure; a common treatment for obstructive sleep apnea.

1900 and a JetBlue flight arriving between 2030-2200. The United flight was cancelled, and the JetBlue flight was delayed. He arrived at Newark about 2300-2330 on Sunday night then the van to the hotel was late. When he got to the hotel around midnight, there was a problem with his paperwork, and he did not have a room. After getting a room, he was in bed by 0100. He slept until about 0600, had breakfast, then took the 0800 van to the airport so he would arrive in time for his 0845 report time. He felt “normal” on the day of the accident; his only issue was that he was coughing. He felt rested and fine. He had been resting a lot at home before the trip because he was sick. He went to bed earlier than normal and did not think he left the house. He was “laid up” and slept in, relaxed and went to bed “abnormally” early.

He did not use his CPAP machine the night before the accident because he arrived late and wanted to go to bed. When he was not working, he would go to sleep about 2200-2300 and wake up “when the sun comes up.” He had no problems falling asleep or staying asleep. He slept through the night and felt that the medications assisted with that while he had the flu. Prior to receiving the medications, he was not sleeping well on the prior trip because he was sick.

He did not use tobacco products and occasionally drank alcohol, the last time being more than 2 weeks before the accident because he had the flu.

2.0. Medical and Pathological Information

A rapid urine drug screen was performed on samples provided by the accident flight crew after the accident. The results for common drugs of abuse and alcohol for each crewmember was reported as “none detected”.

3.0. CommutAir Policies

CommutAir policies were listed in the company General Operations Manual (GOM), pilot contract and Safety Management System (SMS) Manual.

3.1. Increased Scrutiny

The CommutAir GOM, section “Temporary Revision Number 03-18”, titled “Increased Scrutiny,” effective November 1, 2018, stated:

This Temporary Revision updates GOM 1-08.11.

1-08.11 INCREASED SCRUTINY OF LOW-TIME PILOTS OR THOSE WITH REPETITIVE FAILURES

1. A Low-Time Pilot is defined as a pilot who meets any of the following criteria:
 - Fewer than 1,500 total flight hours in turbojet-powered aircraft or fewer than 1,500 hours in 121, 135, or military operations; or,
 - Fewer than 300 total flight hours in type with CommutAir; or,
 - Fewer than 13 months in current Crewmember position with CommutAir.
2. Increased Scrutiny will consist of the following:

- a. A six-month recurrent ground school cycle for a period of one year for any failure of a ground school written exam and/or a failure of an oral checking event
 - b. A six-month line check cycle for a period of one year for any failure of a practical checking event.
 - c. A six-month PC cycle for any failure of a checking event for a Full Time (non-line qualified) Instructor
3. The following events will trigger increased scrutiny:
 - For a Low-Time Pilot - the failure of one checking event or one remedial training event.
 - For a non-Low-Time Pilot - the failure of any checking event or two remedial training events in a two-year period.

***NOTE:** For the purposes of this section, remedial training is defined as requiring addition training to complete a regular training event.*

3.2. Crew Resource Management

The CommutAir GOM, section “08 Pilot General”, subsection “1-08.7 Crew/Dispatch Resource Management”, stated:

1. CommutAir's dedication to flight safety led, in 1997, to the development of a Crew And Dispatcher Resource Management program (referred to collectively as CRM). The development of this program continues to evolve as the industry faces new challenges and we identify new threats to safety.
2. CRM training currently includes all crewmembers and dispatchers. CRM addresses the human factors aspects of flying and is incorporated into CommutAir's operating environment. While CRM provides a means of assessing personal work habits and interpersonal relationships, it is also a valuable tool when used in the threat and error environment.
3. The purpose of CRM is to maximize flight safety by minimizing the occurrence of airplane accidents and incidents caused by human error. CRM is not, however, a magic formula. There are inherent threats and opportunities for errors in aviation. Pilots, Flight Attendants and dispatchers must recognize their limits and realize that they can make errors. Therefore, crewmembers and dispatchers must not only be technically proficient, they must also be familiar with the elements of CRM and the threats, or red flags, that indicate an erosion of the safe operating environment.

The CommutAir GOM, section “08 Pilot General”, subsection “1-08.8 Threat and Error Recognition” stated: “1. As mentioned previously, we use threat and error recognition to attempt to prevent the error chain from forming. By knowing when we are entering “shark infested waters” we can take appropriate action to keep from being eaten.” The GOM defined threats as “a possible source of danger” such as adverse weather, ATC communications, airplane malfunctions and operational pressures. The GOM defined errors as “actions or inactions [caused by crewmembers or dispatchers] that lead to a deviation from intentions or expectations.”

See Attachment 2 to this report for additional information provided to pilots on CRM and its countermeasures, and threats, errors and threat and error management.

3.3. Return to Duty Following Illness

The CommutAir GOM, section “08 Pilot General”, subsection “1-08.33 Return to Duty Following Illness or Surgery,” stated:

1. Flight crewmembers who become ill shall not report for duty and follow the guidelines in the Employee Handbook for calling in sick.
2. Prior to returning to duty, a flight crewmember who has undergone surgery shall obtain a physicians [sic] note verifying their fitness to return to work.

3.4. Commuter Policy

CommutAir allowed pilots to commute to their duty station from their domicile. Included in the pilot contract was section J. “Commuter Policy” which stated, in part:

3. Listing for Travel

- a. A pilot commuting to duty must be listed in an airline computer reservation system on flights that the commuting pilot plans to use to travel to duty. A pilot must list a primary flight and a back-up flight for travel that:
 - i. have adequate seats available within twenty-four (24) hours of departure;
 - ii. have reasonable weather for the route of flight and at the arrival and departure airports; and
 - iii. are scheduled to arrive at the airport where he is assigned to commence his trip before he is scheduled to report for duty.
- b. A pilot may use jumpseat privileges for the primary and backup flight on which he is listed.
- c. If a pilot does not use a reservation system that is accessible to the Company, then he will provide documentation that he complied with the standards listed in paragraph J.3.a., above.

3.5. Safety Management System

CommutAir had a Safety Management System (SMS) in place at the time of the accident; it was accepted by the FAA in December 2018. The CommutAir SMS Manual, section “Preface”, subsection “32-P.2 Introduction” stated, in part: “all employees are expected to participate in the program and to take an active role in the identification, reduction and elimination of hazards. Any employee who does not do so jeopardizes not only their well being, but also the safety of fellow employees. Accordingly, violations of safety and health rules will be subject to the disciplinary process.... No employee will be disciplined when, in good faith, they bring a safety or regulatory compliance matter to the attention of the Safety Department in accordance with this policy. To the contrary, employees are encouraged to bring these issues to the attention of the Safety Department.”

The CommutAir SMS Manual, section “32.02.2 Safety Culture”, stated:

1. Safety is a core value of CommutAir and every effort must be made for continuous improvement. To promote a positive safety culture, management has directed that all co-workers are responsible for, and must consider the impact of, safety in all aspects of their daily life.
2. It is a stated purpose of management to ensure the growth of a positive safety culture where co-workers understand the threats and associated risks inherent in their areas of operation and understand how their performance of safety-related duties contributes to the safety performance of the Company. This is accomplished through formal training and continued coaching.
3. CommutAir supports a reporting culture that encourages every employee to contribute to the corporate safety knowledge base.
4. Upper management has instituted a “*Just Culture*” policy in our organization where all co-workers are treated fairly with dignity and respect, though still held accountable for their actions.
5. To promote the growth of a learning culture in our organization, the outputs from SMS (i.e., identified threats, risk mitigation activities and safety lessons learned) are communicated to co-workers. This information may be shared outside our organization with oversight organizations and industry partners in accordance with established programs and agreements.
6. To enhance the growth of a positive safety culture, the company has implemented the following mandates and programs:
 - a. A formal Safety Policy has been published.
 - b. Company management has allocated the resources required to operate and maintain the SMS.
 - c. Safety responsibilities for all personnel have been published.
 - d. All personnel must receive training on the SMS.
 - e. The employee feedback system with confidentiality provisions.
 - f. The Safety Department maintains a database of safety information collected. The data is regularly analyzed and assessed to improve safety in the organization.
 - g. Clear channels of communication have been established throughout the company with open and honest communication.
 - h. Safety issues are discussed at staff meetings and other company functions to provide for the open exchange of ideas.

4.0. Safety Reporting

In a post-accident interview, the director of flight operations stated he thought the reporting culture at CommutAir was a “work in progress.” He thought this accident was the “perfect example” of crews not reporting issues, such as a localizer issue at PQI, to the company and only to the FAA. He did not know why pilots did not report concerns and thought the company did a good job of providing information and encouraging pilots to report. In a separate post-accident interview, the managing director of safety described the reporting culture as good but said it could always be better. He thought pilots “absolutely” felt comfortable reporting safety concerns.

4.1. Aviation Safety Action Program

Within the CommutAir SMS was the Aviation Safety Action Program (ASAP). According to the SMS Manual, section “32-P.5 Safety Reporting”, subsection “32.P.5.1 Aviation Safety Action Program”, “the primary purpose of the ASAP is to identify safety events, and to implement corrective measures that reduce the opportunity for safety to be compromised.” The CommutAir GOM, section “Preface” subsection “1-P.6.1 Aviation Safety Action Program” further stated, in part, “The program fosters a voluntary, cooperative, non-punitive environment for the open reporting of safety of flight concerns.” According to the Corporate Safety Manual, section “4 Aviation Safety Action Program (ASAP)”, subsection “XXIV-04.1 ASAP-Introduction”, “all ASAP reports will be submitted to the ASAP Manager and will be forwarded to the Event Review Committee for review and acceptance.” Pilots could submit a report by Web-Based Application Tool (WBAT), by contacting the ASAP manager’s office via telephone or the ASAP Hotline within 24 hours after the end of the flight sequence, absent extraordinary circumstances.

4.2. Incident reporting

The CommutAir GOM, section “Preface” subsection “1-P.6.2 Incident Reporting (Formerly Flight Crew Irregularity Report),” stated, in part: “The incident report provides a standardized means of reporting various occurrences which require a statement from the one or more crew members. This report should be accomplished within 24 hours of the occurrence. In addition to the required reports listed below, an incident report will be used for all operational incident reporting, safety enhancement reports and personal injury reports, and if requested by Flight Operations.” Categories of reportable events were use of PIC’s emergency authority; illness, injury, security; major or continued system malfunction; operational problems; TCAS or ACAS resolution advisories issued; and reduced vertical separation minimum.

4.3. WBAT

The CommutAir GOM, section “Preface” subsection “1-P.6.3 WBAT System,” stated:

1. The WBAT system is administered by a private organization contracted by the FAA and provides a web based repository for the reporting of incident and ASAP reports. All ASAP and Incident reports will be collected within the WBAT system. To submit a report, access WBAT via the CommutAir website or directly at www.commutair.com. Once logged onto www.commutair.com, under the Safety Department header you will see submit ASAP and Incident report. This link will take you the WBAT homepage. Select the appropriate employee group and log in.
2. Once logged into the system you will have two choices: Submit an ASAP report or submit an incident report. Automated messages sent to your email will let you know if any more information is required or when a report has been closed out.
3. Pilots may send reports directly to NASA ASRS through WBAT. This is done in conjunction with your ASAP submission by clicking yes when prompted. The response strip from NASA will be sent directly to you, provided your profile is updated.

Pilots could submit an anonymous report using the company hotline or the online safety concerns suggestion box.

5.0. CommutAir Training

The E145 pilot training curriculum was documented in the CommutAir Pilot Training Manual. Training included initial new hire, initial equipment, transition, upgrade, recurrent, and requalification training. Training was divided into segments – ground training, flight training (simulator and aircraft) and qualification (proficiency check).

5.1. CRM/Joint CRM

CRM/joint CRM training was provided during initial new hire, initial equipment, transition, upgrade and recurrent ground training. Initial training consisted of 8 hours of ground school and subsequent training consisted of 2 hours of ground school.

CRM topics were:

- Team building
- Communications (with aircraft, dispatch center, FAA, ATC, maintenance, etc.)
- Situational awareness
- Interpersonal skills
- Workload management
- Effective decision making
- Command/leadership

Joint CRM topics were:

- Team building
- Communications (with aircraft, dispatch center, FAA, ATC, maintenance, etc.)
- Interpersonal skills
- Workload management/coordination
- Effective decision making
- Human factors

The training manual noted (emphasis original) “*When developing or revising this [Joint CRM] module, representatives from Flight Operations, Inflight, and Dispatch will meet and agree on the scenario to be used so as to represent all three employee groups.*”

5.2. SMS Training

Pilots received 1.5 hours of SMS training in initial new hire, initial equipment, transition, upgrade and recurrent ground school. Topics were:

- Basic safety concepts
- Safety policy and commitment
- Understanding errors
- Accident causation
- SMS fundamentals
- Hazard identification
- Employee reporting

5.3. Fatigue Risk Management

Fatigue risk management was included in ground training as a part of the curriculum segment “Aircraft Ground Training,” module “General Subjects – Crewmember Policies.” No additional information was included in the CommutAir Pilot Training Manual.

5.4. Adverse Weather

Adverse weather was included in ground training as a part of the curriculum segment “Aircraft Ground Training,” module “General Operational Subjects – Adverse Weather.” Topics were:

- Ground deice/anti-ice program.
- Operations in ice, slush, snow, and contaminated runways.
- The effects of leading edge contamination on aerodynamic performance.
- Operations in turbulence, including wake turbulence.
- Operations in heavy precipitation.
- Operations in low visibility.
- Visual cues prior to and during descent below DH or MDA.
- Methods used to recognize and avoid severe weather conditions.
- Thunderstorm, Windshear, and Microburst procedures.
- Operations in areas of volcanic ash.
- High Altitude Operations.

5.5. Captain Professional Development

Captain professional development was included in PIC initial new hire, PIC initial equipment and upgrade ground training as a part of the curriculum segment “Aircraft Ground Training,” module “General Operational Subjects – Captain Professional Development.” Training was programmed for approximately 12 hours but may vary based on class size and cumulative experience of students; in no case should the class be less than 6 hours. “All instructors teaching [this module] will be approved by the Director of Training, but biased towards a Management Pilot, Aircrew Program Designee, Line Check Pilot, or Proficiency Check Pilot.” Topics were:

- SOC Tour
- Leadership Principles
- Professional Expectations
- Command, Responsibility, Authority
- Captain’s Reporting Duties, General Duties
- Mentoring
- Duties under 14 CFR 121.542
- General Operating Subject Review
- Maintenance Procedures Review
- Communication Procedures Review
- Performance Data and Dispatch Release Review
- ASAP and other ASRS Hot Topics Review

Katherine Wilson
Human Performance Investigator

Attachments

1. Interview Summaries
2. GOM Excerpts