Docket No. SA-509

Exhibit No. 14A

NATIONAL TRANSPORTATION SAFETY BOARD

Washington, DC

HUMAN PERFORMANCE SPECIALIST'S FACTUAL REPORT

NATIONAL TRANSPORTATION SAFETY BOARD
OFFICE OF AVIATION SAFETY
Washington, DC 20594

Human Performance Factual Report

A. ACCIDENT

Operator:	USAir, Inc.
Aircraft:	McDonnell Douglas DC-9-30, N954VJ
Location:	Charlotte Douglas International Airport, Charlotte, North Carolina
Date:	July 2, 1994
Time:	1851 local
Accident No.	DCA94MA065
Human Performance Investigator:	Barry Strauch

B. SUMMARY

On July 2, 1994, about 1843 eastern daylight time (EDT), a Douglas DC-9-31, N954VJ, owned by USAir, Inc. and operated as USAir Flight 1016, collided with trees and a private residence while executing a missed approach to runway 18R at Charlotte/Douglas International Airport, Charlotte, North Carolina. The captain and one flight attendant received minor injuries; the first officer, two flight attendants and 18 passengers sustained serious injuries; and 27 passengers received fatal injuries. The airplane was destroyed by impact forces and a post-accident fire. Instrument meteorological conditions prevailed, and an instrument flight rules (IFR) flight plan had been filed. Flight 1016 was being conducted under 14 Code of Federal Regulations (CFR) Part 121, as a domestic, scheduled passengers service flight from Columbia, South Carolina, to Charlotte.

C. DETAILS OF THE INVESTIGATION

The human performance investigator participated with the Operations Group in this accident. Refer to the Operations Group Chairman's Factual Report for group members and group activities. The human performance investigator participated in all phases of the activities of the Operations Group with the exception of several in-person and telephonic interviews the Operations Group conducted, the examination of the USAir crew resource management (CRM) program, two interviews conducted independently of the Operations Group, and the observation of USAir windshear training scenarios in a DC-9 flight simulator. Those activities performed independently of the operations group, with the exception of one interview, were performed in the presence of at least one member of the group.

Personnel Possessions

The flight and personal bags of the captain and first officer were retrieved from the accident site and opened in the presence of the operations group. The flight bags of both crewmembers contained flight operations-related publications, and the personal bags contained clothing and personal possessions. No alcohol or illicit drugs were found among the possessions of either crew member.

Crew Resource Management (CRM)

In 1992 USAir implemented its current crew resource management (CRM) program. In the previous program, it conducted CRM through its Captain Development Program, a 2 1/2-day session of preparing first officers for the process of upgrading to captains. The program was conducted by a psychologist and administered only to captains.

Among the activities USAir performed in developing its current program, it: observed the CRM programs of other airlines, interacted with CRM researchers such as Dr. Robert Helmreich of the University of Texas-Austin, and participated in industry/government workshops on relevant topics. After the program had been developed, the company altered its flight training and checking schedule in 1993 to involve both captains and first officers, in their respective crewmember positions, in flight training exercises and involve both in the CRM program. The change was also made to facilitate the company's transition to advanced qualification program (AQP) training.

In the previous flight training and checking regimen, in accordance with FAR Part 121, captains accomplished an annual proficiency check (PC) and six months later completed a proficiency training (PT) exercise, while first officers performed a biennial proficiency check and a biennial proficiency training exercise. In the new training/checking schedule cycle, the captain completes a PC and the first officer a PT. Six months after that both crewmembers take a recurrent line oriented flight training (LOFT) session, six months after that the captain performs a PC while the first officer a PT. Six months after that both take a recurrent LOFT, six months later the captain completes a PC while the first officer performs a PT.

The present CRM program, which consists of three phases, is administered to all crewmembers, regardless of their participation in the previous CRM program. It consists of the following phases, all conducted by USAir pilots:

Phase I: A full day course that introduces the concepts and philosophy of CRM, its importance to flight safety, and methods to implement it in all phases of operations. It serves as the initial training in CRM and was given to all current USAir flightcrew members, including the crew of flight 1016.

Phase II: A recurrent line oriented flight training (LOFT) session that is given to all captains and first officers annually.

Phase III: A one hour-segment devoted to a specific topic within CRM, that is conducted within the annual two-day recurrent training.

Phase I employed a variety of instructional media: videotapes, slides, lectures and class interaction. The session served as an initial training program in CRM. The company intends to implement Phase I again when new pilots are brought on, or those on furlough who had not participated in it have been recalled to flying status.

The Phase I session began with the viewing of a videotape on the United Airlines DC-10 accident in Sioux City, Iowa. The tape employed a montage of actual newsreel footage of the accident sequence, with interviews of the captain describing the benefits of CRM during the emergency. A second video, shown after some discussion of CRM, featured representatives of USAir management, the Airline Pilots Association, the Federal Aviation Administration, and the National Transportation Safety Board discussing the importance of CRM.

The class used slides to illustrate accidents in which CRM was considered to have been either effective or ineffective. The accidents included: United Airlines DC-8 in Portland, Oregon, on December 28, 1978, Northwest Airlines MD-80 in Detroit, Michigan, on August 16, 1987, Delta Airlines L-1011 in Dallas, Ft. Worth, Texas, on August 2, 1985, Alaska Airlines B-727 in Ketchikan, Alaska, on April 5, 1976, Air Florida Boeing 737 in Washington, DC, on January 13, 1982, Eastern Airlines L-1011 in the Everglades on December 29, 1972, United Airlines DC-10 in Sioux City, Iowa, on July 19, 1988, United Airlines Boeing 747 on February 24, 1989, USAir Boeing 737 in New York City on September 20, 1989, and the incident involving a USAir Boeing 737 in Kansas City, Missouri, on September 8, 1989.

Another videotape discussed the need to "shift paradigms" in thinking about information, and interpreting events in the world. Other videotapes contained segments of notable films and television programs, designed to address the points made during the class.

Among the objectives of Phase I is the introduction of 10 critical "markers" that have been designated as enhancing flight safety. The absence of any one could detract from safety. The markers include:

Briefings of crewmembers
Inquiry and Assertiveness
Feedback
Communications/Decision making
Leadership/Followership

Interpersonal Relationship/Cockpit Climate
Preparation/Plans/Vigilance
Workload/Distraction Avoidance
Technical Proficiency, and
Overall Crew Effectiveness.

The recurrent LOFT, USAir's CRM Phase II, is similar across the airline's fleet types. It contains two scenarios that feature a system problem, with the crew taking certain actions in response. The LOFT scenarios and the outcome are functions of the actions the crew takes. In the time remaining at the conclusion of the LOFT session, the captain completes a PC, by performing required maneuvers, such as a V1 cut, that had not yet been performed. The session is videotaped and the tape reviewed by the crewmembers at the conclusion of the session with the instructor. The tape is then erased.

The current Phase III stresses the importance of obtaining participation from all participants of flight operations, including flight attendants, in the conduct of a flight. The tape recreates an actual incident that occurred to a USAir B-737 in Charlotte in which it was about to takeoff, with the spoilers partially deployed. Because of timely notice by flightcrew members seated in the aircraft's cabin, and the communication information on the spoilers from those flightcrew members to the flight attendants, and then to the cockpit, a potential accident was averted. Interviews with the crewmembers involved, and their experiences in that incident, are featured. The incident itself was attributed to a fault in the electrical system that prevented the failure of the spoilers to be locked to be transmitted to the cockpit.

Seventy two-hour history

The captain was off duty for three days before the beginning of this trip. On Wednesday, June 29, he flew in the morning with the National Guard with his squadron based at Wright Patterson Air Force Base, near his home in Ohio. On Thursday, June 30, he played golf during the day and on Friday, July 1, he went jogging, worked out at a local martial arts facility, and performed household errands. He regularly went to sleep between 2200 and 2300, and awoke about 0700. On the day of the accident, he awoke about 0455, drove to the Dayton, Ohio, airport and travelled to PIT on a flight that departed Dayton about 0745. The report time for the trip that included the accident flight was 0945, the departure to LGA was 1045.

The first officer flew a four-day trip that ended at 0915, July 2. On Thursday, June 30, he arrived at the destination airport, (Tri Cities) at 2230, had a light dinner and went to sleep around 0130. He awoke that morning, Friday, July 1, at 0900 and arrived at the destination airport, St. Louis, at 2040, and went to sleep about 2330, eastern time. He arose the morning of the accident about 0615 and flew the leg to

PIT that departed St. Louis at 0810. He arrived at PIT at 0930 the day of the accident.

Medical/Personal Factors

The captain was issued a first class medical certificate on June 15, 1994, with no waivers or limitations. The first officer was issued a first class medical certificate on April 13, 1994, with no waivers or limitations. Both pilots were asked about the presence of personal or financial difficulties at the time of the accident and both stated that there were none present. The captain was married and the father of two small children, the first officer had married a USAir flight attendant about 4 months before the accident. The first officer had no children.

Blood was drawn from the pilots by the Charlotte hospital that they were taken to after the accident. The blood was analyzed for the presence of alcohol. None was found nor were illegal drugs found in the specimens the pilots provided.

A search of the National Drivers Register, to determine if the drivers license of either crewmember had been suspended or revoked, indicated no suspension or revocation of the license of either crewmember. A search of the National Crime Information Center indicated that neither the captain nor the first officer had been arrested.

Corporate Factors

USAir was formed by the merger, in the late 1980s, of USAir, the former Allegheny Airlines and Piedmont Airlines, as well as an earlier merger of USAir with Pacific Southwest Airlines. Both Piedmont and Allegheny had been involved in mergers with and acquisitions of other airlines before they themselves merged. Since 1992 the airline has lost what is commonly regarded as a considerable amount of money. On July 21, 1994, it reported a small profit for the quarter, the second quarter in the past 10 quarters in which a profit had been reported. In 1992, British Airways invested about $400 million to acquire about 21% ownership of USAir. This investment allowed British Airways to acquire a proportionate amount of voting stock, and place several officials on the USAir Board of Directors. In early 1994, British Airways announced that it was reconsidering its previously stated intention of investing further in USAir, until the company was able to reduce its costs. In 1994, the company announced that it hoped to take several steps to reduce costs by an estimated $1 billion a year. Much of the cost reduction it planned to obtain in salary and work rule concessions from its employees, as well as applying more efficient procedures to its operations.

In early 1994, the president resigned and new president was appointed. The new president was generally accepted by USAir employees. About 4 months before the accident, new managers were appointed to several key positions in flight operations, including a new Director, Flight Safety and Quality Assurance, and Chief Pilot, PIT. All management pilots that the Safety Board interviewed indicated that the financial losses the airline sustained did not affect flight operations or flight training. They stated that the company was willing to support reasonable requests for training and pointed to the increased costs incurred by its new training program, estimated at $2 million, and the cost of the initial training in CRM incurred when it was administered to all crewmembers.

Management pilots also indicated that, at the time of the accident, the operating procedures were standardized and, that the origin of any one crewmember, e.g, USAir, Piedmont or Pacific Southwest Airlines, would be invisible to one observing crewmembers operating in an airline cockpit.

Barry Strauch
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