

10/31/95 10:54 NTSB AS-30 - 9999994 9345

NO. 545 P022/004

NATIONAL TRANSPORTATION SAFETY BOARD  
OFFICE OF AVIATION SAFETY (AS-50)  
Washington, D.C. 20594

October 27, 1995

HUMAN PERFORMANCE GROUP  
GROUP CHAIRMAN'S FACTUAL REPORT OF INVESTIGATION

THIRD ADDENDUM

A. ACCIDENT: DCA-94-MA-076

Location: Aliquippa, Pennsylvania  
Date: September 8, 1994  
Time: 1904 Eastern Daylight Time  
Airplane: Boeing 737-300, N513AU

B. HUMAN PERFORMANCE GROUP

Chairman: Malcolm Brenner, Ph.D.  
National Transportation Safety Board

Members: Captain Charles F. Leonard  
National Transportation Safety Board

Captain Robert L. Sumwalt  
Air Line Pilots Association -- USAir

R. Curtis Graeber, Ph.D.  
Boeing Commercial Airplane Group

Captain Mike Carriker  
Boeing Commercial Airplane Group

Captain Paul Sturpe  
USAir

Peter J. Lambrou, M.D.  
USAir

Phyllis Kayten, Ph.D.  
Federal Aviation Administration

Chuck DeJohn, D.O.  
Federal Aviation Administration

10/31/95 10:55 NTSE AS-30 + 9999994 9345

NO.545 P003/004

### C. SUMMARY

On September 8, 1994, at 1904 Eastern Daylight time USAir flight 427, a Boeing 737-300, N513AU, crashed while maneuvering to land at Pittsburgh International Airport (PIT), Pittsburgh, Pennsylvania. The airplane was being operated on an instrument flight rules (IFR) flight plan under the provisions of Title 14, Code of Federal Regulation (CFR), Part 121, on a regularly scheduled flight from Chicago-O'Hare International Airport, Chicago, Illinois, to Pittsburgh. The airplane was destroyed by impact forces and fire near Aliquippa, Pennsylvania. All 132 persons on board the airplane were fatally injured.

### D. DETAILS OF INVESTIGATION

This report continues the documentation of activities reported in the Human Performance Group Chairman's Factual Report, Second Addendum, dated October 5, 1994. Corrections are noted for the Second Addendum report, and additional information is provided relevant to the investigation.

#### 1. Corrections to the Second Addendum report

The following corrections should be noted in the Second Addendum report:

p. 1. The correct spelling of the name of a group member is Phyllis Kayten, Ph.D.

p. 7. The last sentence of Section 12 should read: "The crew had received and was aware of the latest revision to the yaw damper non-normal procedures."

p. 7. The phrase "[in preparation]" should be removed from the last sentence of Section 13.

#### 2. Aerobatic experience of the captain

As noted in the Second Addendum report, Captain Germano underwent pilot training in the U.S. Air Force (USAF) in 1973. This information can be expanded as follows with regard to aerobatic activities. According to records, the captain attended USAF pilot training as a member of the Air National Guard (ANG). During his training to the standard syllabus, he received extensive instruction and demonstrated proficiency in spin recovery and other basic aerobatic maneuvers. He graduated in December 1973 and returned to his ANG unit. In February, 1974, he started flying the O-2, which is the military version of the Cessna 337, a push-pull, two engine (reciprocating) airplane. It is certified as a "Normal Category" airplane, and, as such, is not certified for acrobatic maneuvers. The ANG used the airplane

10/31/95 10:55 NTSB AS-30 + 9999994 9345

NO. 545 P004/004

for the forward air controller mission, which required abrupt maneuvering and rapid changes in aircraft attitudes, often at low altitudes. Captain Germano was not a Certified Flight Instructor.

### 3. Aerobatic experience of the first officer

As noted in the Second Addendum report, the Safety Board reviewed the pilot log books of First Officer Emmett. These covered the period from June 6, 1970, until February 2, 1988, and were notable for detailed documentation of the flights and the maneuvers performed. The following additional information can be provided regarding aerobatic experience. On two flights, when he had a total flight time of 77 and 78 hours, his logbook documented the practice of a spin recovery in a Piper J-3. First Officer Emmett was not a Certified Flight Instructor.

### 4. SATORI presentation

The Federal Aviation Administration (FAA) Civil Aeromedical Institute (CAMI) prepared a video presentation for the Human Performance Group using the Systematic Air Traffic Operations Research Initiative (SATORI) program. SATORI provided a dynamic graphical representation of the air traffic situation in a format similar to the one displayed on an en route radar display and presented the accident airplane and surrounding aircraft during the time period preceding and during the accident. The SATORI re-creation included synchronized air traffic control audio communications, and provided two orientations of visual perspective and range. The re-creation was reviewed by the Human Performance Group to observe relative positions of the accident airplane and surrounding aircraft, and to provide an overview of the accident sequence from an air traffic control perspective.

### 5. Flight data recorder information on upset incidents

The Performance Group is entering into the public docket the flight data recorder (FDR) records for a group of Boeing 737 upset incidents investigated recently by the Safety Board. This includes FDR records pertaining to the two incidents discussed in the Second Addendum report, involving a Southwest Airlines crew and an incident at Richmond (p. 7), with the FDR records supplementing the interview information provided in that report.

~~Malcolm Brenner, Ph.D.~~  
Senior Human Performance Investigator

~~5/5/96~~  
10/30