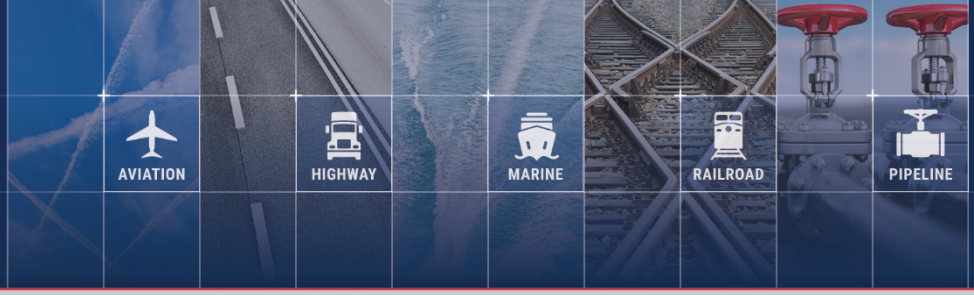

Aviation Investigation Factual Report

Location:	Hebron, Kentucky	**Incident Number:**	MIA01IA051
Date & Time:	December 26, 2000, 17:29 Local	**Registration:**	N729CA
Aircraft:	Canadair CL-600-2B19	**Aircraft Damage:**	None
Defining Event:		**Injuries:**	53 None
Flight Conducted Under:	Part 121: Air carrier - Scheduled		

Factual Information

On December 26, 2000, about 1729 eastern standard time, a Bombardier CL-600-2B19, N729CA, registered to First Union National Bank, operated by Comair, Inc., as flight 5751, experienced cracking of the captain's windshield while climbing to cruise after takeoff from the Cincinnati/Northern Kentucky International Airport, Hebron, Kentucky. Visual meteorological conditions prevailed at the time and an instrument flight rules (IFR) flight plan was filed for the 14 CFR Part 121, scheduled, domestic, passenger flight. The airplane was not damaged and there were no injuries to the airline transport-rated captain, commercial-rated first officer, flight attendant, or 50 passengers. The flight originated at 1719.

According to the airline safety manager, while climbing through 20,000 feet in visual meteorological conditions, the captain's windshield "shattered." The captain did not declare an emergency; the flight returned to the departure airport and landed uneventfully.

The damaged windshield (PPG part number NP 139321-5, S/N 99018H7134) was removed from the airplane and initial examination revealed that the center ply was failed. The window was further examined in the presence of representatives of the NTSB, FAA, Bombardier, and PPG, at one PPG's facilities.

A report of the damaged windshield prepared by PPG indicates, "The fracture originated 0.20 inch from the bottom edge and 3.8 inches from the center of the forward corner. The origin of the fracture was a peel chip that developed on the outboard surface in the bottom forward corner area. The initiation point of the peel chip damage was located 0.115 inch from the inner edge of the Teflon tape and 0.325 inch from the glass edge." The report also indicates that examination of the peel chip using a microscope, "...did not reveal any surface damage at the peel chip initiation point, nor was there any indication of manufacturing defects." No discrepancies were noted with the anti-ice heating system and sensing elements. Optical distortion check of the damaged window was performed which revealed, "There was no slope-line distortion apparent in the critical vision area. However, facilities were not available to perform a quantitative distortion evaluation." Residual visibility examination could not be performed due to the absence of a standard and prescribed method of evaluation (a copy of the report is an attachment to this report).

Manufacturing of windshield S/N 99018H7134 was completed on January 18, 1999; the window was installed in the incident airplane by Comair maintenance personnel on March 27, 1999, to replace the previous window which "shattered while sitting at gate power off." The incident window had accumulated a reported 4,422.8 hours and 4,526 cycles at the time of failure.

The airplane minus the retained captains windshield was released to Michael L. Mizell,

compliance analyst for Comair, on January 17, 2001. The retained windshield was authorized by Michael L. Mizell, compliance analyst for Comair, to be disposed of (a copy of his letter authorizing such is an attachment to this report).

Pilot Information

Certificate:	Airline transport; Commercial	**Age:**	58,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 1 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	November 13, 2000
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	
Flight Time:	15734 hours (Total, all aircraft)		

Co-pilot Information

Certificate:	Commercial; Flight instructor	**Age:**	33,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Right
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	Airplane single-engine; Instrument airplane	**Toxicology Performed:**	No
Medical Certification:	Class 1 Valid Medical--no waivers/lim.	**Last FAA Medical Exam:**	April 11, 2000
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	
Flight Time:	1500 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Canadair	**Registration:**	N729CA
Model/Series:	CL-600-2B19	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Transport	**Serial Number:**	7265
Landing Gear Type:	Retractable - Tricycle	**Seats:**	50
Date/Type of Last Inspection:	Unknown	**Certified Max Gross Wt.:**	
Time Since Last Inspection:		**Engines:**	2 Turbo fan
Airframe Total Time:		**Engine Manufacturer:**	GE
ELT:		**Engine Model/Series:**	CF-34
Registered Owner:	First Union National Bank	**Rated Power:**	
Operator:	COMAIR INC	**Operating Certificate(s) Held:**	Flag carrier (121)
Operator Does Business As:	Delta Connection	**Operator Designator Code:**	COMA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Not reported
Observation Facility, Elevation:	KCVG,897 ft msl	**Distance from Accident Site:**	
Observation Time:	16:51 Local	**Direction from Accident Site:**	
Lowest Cloud Condition:		**Visibility**	2.5 miles
Lowest Ceiling:	Overcast / 2000 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	/ None	**Turbulence Type Forecast/Actual:**	/
Wind Direction:		**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.42 inches Hg	**Temperature/Dew Point:**	-6°C / -11°C
Precipitation and Obscuration:	Light - None - Snow		
Departure Point:	Hebron, KY (KCVG)	**Type of Flight Plan Filed:**	IFR
Destination:	Greer, SC (KGSP)	**Type of Clearance:**	IFR
Departure Time:	17:19 Local	**Type of Airspace:**	Class A

Wreckage and Impact Information

Crew Injuries:	3 None	**Aircraft Damage:**	None
Passenger Injuries:	50 None	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	53 None	**Latitude, Longitude:**	39.080154,-84.699905(est)

Administrative Information

Investigator In Charge (IIC):	Monville, Timothy
Additional Participating Persons:	Eric West; FAA; AAI-100; Washington, DC Raymond L Mang; PPG Industries, Inc.; Huntsville, AL Tony Lively; Bombardier Aerospace; Montreal Michael Mizell; Comair; Cincinnati, OH Alan Dean; ALPA; Cincinnati, OH
Report Date:	April 10, 2002
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this incident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=50855