



# National Transportation Safety Board Aviation Accident Final Report

---

<b>Location:</b>	MONROE, MI	<b>Accident Number:</b>	DCA97MA017
<b>Date &amp; Time:</b>	01/09/1997, 1554 EST	<b>Registration:</b>	N265CA
<b>Aircraft:</b>	Embraer EMB-120RT	<b>Aircraft Damage:</b>	Destroyed
<b>Defining Event:</b>		<b>Injuries:</b>	29 Fatal

**Flight Conducted Under:** Part 135: Air Taxi & Commuter - Scheduled

---

## Analysis

The flight was being vectored for the approach to runway 3R at Detroit Metropolitan Wayne County Airport (DTW) when the aircraft descended and impacted the ground. The aircraft struck the ground in a steep nose-down attitude in a level field in a rural area about 19 nm southwest of DTW. The flight carried 26 passengers and 3 crew members. There were no survivors and the airplane was destroyed by impact forces and a post crash fire. Instrument meteorological conditions prevailed at the time of the accident. The investigation revealed that it was likely that the airplane gradually accumulated a thin, rough glaze/mixed ice coverage on the leading edge deicing boot surfaces, possibly with ice ridge formation on the leading edge upper surface, as the airplane descended from 7,000 feet mean sea level (msl) to 4,000 feet msl in icing conditions, which may have been imperceptible to the pilots. The pilots had been instructed by air traffic control to slow to 150 knots and according to flight data recorder information, the airplane began to show signs of departure from controlled flight as it decelerated from 155 to 156 knots while in a flaps-up configuration. The investigation disclosed that the FAA failed to adopt a systematic and proactive approach to the certification, and operational issues of turbopropeller-driven transport airplane icing. The icing certification process has been inadequate because it has not required manufacturers to demonstrate the airplane's flight handling and stall characteristics under a sufficiently realistic range of adverse ice accretion/flight handling conditions. The aircraft manufacturer had issued a revision in April, 1996 to the approved flight manual which included activation of the leading edge deicing boots at the first sign of ice formation. The airplane operator did not incorporate the procedure, because it was contrary to the company's trained procedures and practices and of the belief that enacting the changes would result in potentially unsafe operation. Investigators' discussion with management personnel at each of the seven U.S.-based operators of the aircraft indicated that at the time of the accident only two of these operators had changed their procedures to reflect the information in the revision. The FAA, at the time of the accident, did not require manufacturers of all turbine-engine driven airplanes to publish minimum airspeed information for various flap configurations and phases and conditions of flight. During Safety Board investigators postaccident interviews with company pilots, there were inconsistent answers on the complex and varied minimum airspeed requirements established by the company for both icing and nonicing conditions. It was also noted that the pilots uncertainty

of the appropriate airspeeds might have been associated with the language used, the different airspeeds and criteria contained in the guidance, the company's methods of distribution, and the company's failure to incorporate the guidance as a formal, permanent revision to the flight standards manual.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The Federal Aviation Administration's (FAA) failure to establish adequate aircraft certification standards for flight in icing conditions, the FAA's failure to ensure that at Centro Tecnico Aeroespacial/FAA-approved procedure for the accident airplane's deice system operation was implemented by U.S.-based air carriers, and the FAA's failure to require the establishment of adequate minimum airspeeds for icing conditions, which led to the loss of control when the airplane accumulated a thin, rough, accretion of ice on its lifting surfaces. Contributing to the accident were the flightcrew's decision to operate in icing conditions near the lower margin of the operating airspeed envelope (with flaps retracted) and Comair's failure to establish and adequately disseminate unambiguous minimum airspeed values for flap configurations and for flight in icing conditions.

## Findings

Occurrence #1: LOSS OF CONTROL - IN FLIGHT  
Phase of Operation: APPROACH

### Findings

1. (C) WEATHER CONDITION - ICING CONDITIONS
2. (C) AIRCRAFT CONTROL - NOT MAINTAINED - PILOT IN COMMAND
3. (C) AIRFRAME - ICE
4. (C) AIRCRAFT CONTROL - NOT MAINTAINED
5. ANTI-ICE/DEICE SYSTEM
6. (C) IN-FLIGHT PLANNING/DECISION - INADEQUATE - PILOT IN COMMAND
7. (C) INFORMATION UNCLEAR - COMPANY/OPERATOR MANAGEMENT
8. (C) INADEQUATE CERTIFICATION/APPROVAL - FAA(ORGANIZATION)
9. (C) AIRSPEED - NOT MAINTAINED - PILOT IN COMMAND
10. (C) STALL

-----  
Occurrence #2: IN FLIGHT COLLISION WITH TERRAIN/WATER  
Phase of Operation: DESCENT - UNCONTROLLED

### Findings

11. TERRAIN CONDITION - OPEN FIELD

## Factual Information

On January 9, 1997, Comair flight 3272, an Embraer EMB-120RT, N265CA, crashed while being vectored for approach to runway 3R at Detroit Metropolitan Wayne County Airport. The flight was operated under Code of Federal Regulations (CFR) Part 135 and carried 26 passengers and 3 crew members. There were no survivors, and the airplane was destroyed by impact forces and a post crash fire. Instrument meteorological conditions prevailed at the time of the accident.

### Pilot Information

<b>Certificate:</b>	Airline Transport; Commercial	<b>Age:</b>	42, Male
<b>Airplane Rating(s):</b>	Multi-engine Land; Single-engine Land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	Helicopter	<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	Helicopter	<b>Second Pilot Present:</b>	Yes
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	Yes
<b>Medical Certification:</b>	Class 1 Valid Medical--no waivers/lim.	<b>Last FAA Medical Exam:</b>	08/08/1996
<b>Occupational Pilot:</b>		<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	5329 hours (Total, all aircraft), 2302 hours (Total, this make and model), 3400 hours (Pilot In Command, all aircraft), 234 hours (Last 90 days, all aircraft), 85 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

### Co-Pilot Information

<b>Certificate:</b>	Commercial	<b>Age:</b>	28, Male
<b>Airplane Rating(s):</b>	Multi-engine Land; Single-engine Land	<b>Seat Occupied:</b>	Rear
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	Yes
<b>Instructor Rating(s):</b>	Airplane Multi-engine; Airplane Single-engine; Instrument Airplane	<b>Toxicology Performed:</b>	
<b>Medical Certification:</b>	Class 1 With Waivers/Limitations	<b>Last FAA Medical Exam:</b>	06/21/1996
<b>Occupational Pilot:</b>		<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>			

## Aircraft and Owner/Operator Information

Aircraft Make:	Embraer	Registration:	N265CA
Model/Series:	EMB-120RT EMB-120RT	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Transport	Serial Number:	120257
Landing Gear Type:	Retractable - Tricycle	Seats:	30
Date/Type of Last Inspection:	12/27/1996, Continuous Airworthiness	Certified Max Gross Wt.:	25353 lbs
Time Since Last Inspection:	89 Hours	Engines:	2 Turbo Prop
Airframe Total Time:	12752 Hours	Engine Manufacturer:	P&W
ELT:	Installed	Engine Model/Series:	PW118
Registered Owner:	FIRST SECURITY BANK OF UTAH,	Rated Power:	1800 hp
Operator:	COMAIR, INC.	Operating Certificate(s) Held:	Commuter Air Carrier (135); Flag carrier (121)
Operator Does Business As:	COMAIR AIRLINES	Operator Designator Code:	COMA

## Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument Conditions	Condition of Light:	Day
Observation Facility, Elevation:	DTW, 640 ft msl	Distance from Accident Site:	19 Nautical Miles
Observation Time:	2054 EST	Direction from Accident Site:	20°
Lowest Cloud Condition:	Thin Broken / 600 ft agl	Visibility	0.75 Miles
Lowest Ceiling:	Broken / 600 ft agl	Visibility (RVR):	
Wind Speed/Gusts:	5 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	70°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29 inches Hg	Temperature/Dew Point:	-2° C / -3° C
Precipitation and Obscuration:			
Departure Point:	CINCINNATI, OH (CVG)	Type of Flight Plan Filed:	IFR
Destination:	DETROIT, MI (DTW)	Type of Clearance:	IFR
Departure Time:	1451 EST	Type of Airspace:	Class B

## Airport Information

Airport:	DETROIT METROPOLITAN (DTW)	Runway Surface Type:	Concrete
Airport Elevation:	640 ft	Runway Surface Condition:	
Runway Used:	3R	IFR Approach:	Localizer Only
Runway Length/Width:	10000 ft / 150 ft	VFR Approach/Landing:	

## Wreckage and Impact Information

Crew Injuries:	3 Fatal	Aircraft Damage:	Destroyed
Passenger Injuries:	26 Fatal	Aircraft Fire:	On-Ground
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	29 Fatal	Latitude, Longitude:	

## Administrative Information

Investigator In Charge (IIC):	RICHARD G RODRIGUEZ	Report Date:	08/21/2001
Additional Participating Persons:	ROBERT L HENLEY		
Publish Date:			
Investigation Docket:	NTSB accident and incident dockets serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at <a href="mailto:pubinq@ntsb.gov">pubinq@ntsb.gov</a> , or at 800-877-6799. Dockets released after this date are available at <a href="http://dms.nts.gov/pubdms/">http://dms.nts.gov/pubdms/</a> .		

The National Transportation Safety Board (NTSB), established in 1967, is an independent federal agency mandated by Congress through the Independent Safety Board Act of 1974 to investigate transportation accidents, determine the probable causes of the accidents, issue safety recommendations, study transportation safety issues, and evaluate the safety effectiveness of government agencies involved in transportation. The NTSB makes public its actions and decisions through accident reports, safety studies, special investigation reports, safety recommendations, and statistical reviews.

The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).