



# National Transportation Safety Board Aviation Accident Final Report

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<b>Location:</b>	ARDMORE, OK	<b>Accident Number:</b>	FTW95FA129
<b>Date &amp; Time:</b>	03/02/1995, 0815 CST	<b>Registration:</b>	N9448B
<b>Aircraft:</b>	CESSNA 208B	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>		<b>Injuries:</b>	1 Minor
<b>Flight Conducted Under:</b>	Part 135: Air Taxi & Commuter - Non-scheduled		

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## Analysis

STRUCTURAL ICE ACCUMULATED ON THE AIRPLANE AT A RAPID RATE WHILE THE PILOT WAS EXECUTING A PROCEDURE TURN DURING AN NDB APPROACH TO HIS DESTINATION AIRPORT. THE PILOT APPLIED MAXIMUM AVAILABLE POWER BUT WAS UNABLE TO ARREST THE RATE OF DESCENT. THE PILOT MAINTAINED 110 KNOTS DURING THE APPROACH AND AFTER BREAKING OUT INTO VISUAL CONDITIONS ELECTED TO PERFORM A FORCED LANDING IN AN OPEN FIELD 2 MILES SHORT OF THE DESTINATION AIRPORT. THE PILOT WAS UNABLE TO ARREST HIS DESCENT AND THE AIRPLANE IMPACTED THE GROUND IN A 5 DEGREE NOSE DOWN ATTITUDE. THE PILOT ALSO STATED THAT HIS FORWARD VISIBILITY WAS COMPLETELY OBSCURED BY THE ACCUMULATION OF CLEAR ICE ON THE WINDSHIELD. THE AIRPORT MANAGER INFORMED THE PILOT THAT FREEZING DRIZZLE WAS PRESENT AT THE AIRPORT WHEN THE PILOT CALLED THE UNICOM DURING THE INITIAL PORTION OF THE INSTRUMENT APPROACH.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: THE PILOT'S CONTINUED FLIGHT INTO ADVERSE WEATHER CONDITIONS. FACTORS WERE THE ICING CONDITIONS PREVAILING AT THE DESTINATION AIRPORT, AND THE PILOT'S INABILITY TO MAINTAIN VISUAL LOOKOUT DUE TO WINDSHIELD ICING.

## Findings

Occurrence #1: IN FLIGHT ENCOUNTER WITH WEATHER  
Phase of Operation: APPROACH - IAF TO FAF/OUTER MARKER (IFR)

### Findings

1. (F) WEATHER CONDITION - ICING CONDITIONS
  2. (F) WEATHER CONDITION - DRIZZLE/MIST
  3. (C) FLIGHT INTO KNOWN ADVERSE WEATHER - CONTINUED - PILOT IN COMMAND
  4. AIRFRAME - ICE
  5. (F) LEVEL OFF - NOT POSSIBLE - PILOT IN COMMAND
  6. WINDOW, FLIGHT COMPARTMENT WINDOW/WINDSHIELD - ICE
  7. (F) VISUAL LOOKOUT - NOT POSSIBLE - PILOT IN COMMAND
  8. AIRCRAFT/EQUIPMENT INADEQUATE - MANUFACTURER
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Occurrence #2: IN FLIGHT COLLISION WITH TERRAIN/WATER  
Phase of Operation: EMERGENCY LANDING

### Findings

9. FLARE - NOT POSSIBLE - PILOT IN COMMAND

## Factual Information

### HISTORY OF FLIGHT

On March 2, 1995, at 0815 central standard time, a Cessna 208B, N9448B, was substantially damaged during a forced landing near Ardmore, Oklahoma. The instrument rated commercial pilot suffered minor injuries. The airplane, operating under the callsign Martinaire 633, was owned by Cessna Finance Corporation, of Wichita, Kansas, and operated by MartinAire of Dallas, Texas. Instrument meteorological conditions prevailed for the 14 CFR Part 135 cargo flight.

According to the operator, the airplane departed the Tulsa International Airport (TUL), at 0715 with a payload of 1,300 pounds of cargo, destined for the Ardmore Downtown Executive Airport (1FO). A weather briefing was received and an instrument flight plan filed.

The pilot stated he was cleared for the NDB Runway 35 Approach to Ardmore while level at 5,000 feet. The pilot further stated that as he proceeded from the VOR to the NDB for the procedure turn, the airplane accumulated ice at a rapid rate. The pilot stated that he added maximum available power, as he continued to cycle the wing/strut deicing boots.

The pilot stated that the airplane was configured with flaps up, airspeed at 110 knots when he broke out into visual conditions at approximately 400 feet AGL. The pilot further stated that he was unable to arrest the 400 to 500 fpm rate of descent to hold altitude. The airplane impacted in an open pasture in a nose low attitude. The nose landing gear separated, the mains collapsed, and the cargo pod was crushed.

### PERSONNEL INFORMATION

The pilot who is home-based at Tulsa, Oklahoma, stated that he had been on duty since 2130 the previous night, and had flown a total of 4.2 hours during the same duty period. His last training session and check ride were completed on February 24, 1995.

### AIRCRAFT INFORMATION

The 1988 model airplane was issued a normal category airworthiness certificate on September 22, 1988. The airplane was certified as a single pilot aircraft, certified for flights into known light to moderate icing conditions. The airplane was not equipped with deicing boots for the noscap of the cargo pod or the landing gear struts.

A review of the airframe and engine records by the FAA inspector, did not reveal any anomalies, uncorrected maintenance, or overdue airworthiness directives. All of the aircraft's deicing and anti-icing systems were reported as operational prior to the flight. The pilot had not reported any maintenance anomalies prior to the flight; however, during a post-accident interview the pilot stated that forward visibility through the detachable electric windshield anti-ice panel was inadequate, and his forward visibility was completely obscured by the accumulation of clear ice on the windshield.

A review of the loading of the airplane revealed that at the time of the accident, the airplane was being operated within the prescribed weight and balance limits.

### METEOROLOGICAL INFORMATION

The Automatic Weather Observation System (AWOS) weather report for Ardmore for 0700 CST was reported as sky partially obscured, 700 overcast, with a mile and a half visibility in

drizzle. Temperature was 26 degrees, with a dew point of 25 degrees. The weather minimums for the NDB Runway 35 approach were 638 feet and 1 mile visibility.

#### COMMUNICATIONS

The pilot informed the airport manager on the Unicom frequency, that he had the current AWOS weather, and he was executing the NDB Runway 35 approach. The airport manager stated that he informed the pilot that freezing drizzle was present and the pilot acknowledged the transmission. His last radio transmission occurred when the pilot reported "procedure turn inbound" to the Unicom.

#### WRECKAGE AND IMPACT INFORMATION

The airplane impacted on an open pasture approximately 2 miles south of the approach end of runway 35, and one mile west of the extended centerline. Ground scars were found at the initial point of impact on a measured heading of 155 degrees. Chunks of rime and mixed ice contoured to the shape of several parts of the aircraft were found at the initial point of impact. The nose wheel strut and several other components associated with the nose wheel were found within 20 feet of the initial point of impact.

After sliding for approximately 100 yards, the airplane came to rest on a measured magnetic heading of 330 degrees. All three composite blades separated at the hub. The spinner and hub assembly remained attached to the propeller shaft. The two main landing gears were found pushed aft and up, touching the respective wing strut. The belly cargo pod was crushed up and to the left.

The wing flaps were found extended to 20 degrees. The elevator trim was found in the full nose up position. The engine inertial separator was found in the bypass mode.

#### ADDITIONAL DATA

The wreckage was released to the owner's representative on March 2, 1995, following completion of the field portion of the investigation.

A teardown of the propeller was performed at the propeller manufacturer's facility. A copy of the examination report is enclosed.

## Pilot Information

<b>Certificate:</b>	Flight Instructor; Commercial	<b>Age:</b>	31, Male
<b>Airplane Rating(s):</b>	Multi-engine Land; Single-engine Land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	Seatbelt, Shoulder harness
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	Airplane Multi-engine; Airplane Single-engine; Instrument Airplane	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 1 Valid Medical--no waivers/lim.	<b>Last Medical Exam:</b>	12/19/1994
<b>Occupational Pilot:</b>		<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	4374 hours (Total, all aircraft), 2065 hours (Total, this make and model), 4110 hours (Pilot In Command, all aircraft), 180 hours (Last 90 days, all aircraft), 60 hours (Last 30 days, all aircraft), 4 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Manufacturer:</b>	CESSNA	<b>Registration:</b>	N9448B
<b>Model/Series:</b>	208B 208B	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	No
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	208B0121
<b>Landing Gear Type:</b>	Tricycle	<b>Seats:</b>	2
<b>Date/Type of Last Inspection:</b>	12/15/1994, AAIP	<b>Certified Max Gross Wt.:</b>	8750 lbs
<b>Time Since Last Inspection:</b>	190 Hours	<b>Engines:</b>	1 Turbo Prop
<b>Airframe Total Time:</b>	3669 Hours	<b>Engine Manufacturer:</b>	P&W
<b>ELT:</b>	Installed, not activated	<b>Engine Model/Series:</b>	PT6A-114
<b>Registered Owner:</b>	CESSNA FINANCE CORP.	<b>Rated Power:</b>	600 hp
<b>Operator:</b>	MARTINAIRE INC.	<b>Air Carrier Operating Certificate:</b>	On-demand Air Taxi (135)
<b>Operator Does Business As:</b>		<b>Operator Designator Code:</b>	MT9A

## Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument Conditions	Condition of Light:	Day
Observation Facility, Elevation:	, 0 ft msl	Observation Time:	0000
Distance from Accident Site:	0 Nautical Miles	Direction from Accident Site:	0°
Lowest Cloud Condition:	Unknown / 0 ft agl	Temperature/Dew Point:	-3° C / -4° C
Lowest Ceiling:	Overcast / 700 ft agl	Visibility	1.75 Miles
Wind Speed/Gusts, Direction:	Light and Variable	Visibility (RVR):	0 ft
Altimeter Setting:	30 inches Hg	Visibility (RVV):	0 Miles
Precipitation and Obscuration:			
Departure Point:	TULSA, OK (TUL)	Type of Flight Plan Filed:	IFR
Destination:	(1F0)	Type of Clearance:	IFR
Departure Time:	0730 CST	Type of Airspace:	Class E

## Wreckage and Impact Information

Crew Injuries:	1 Minor	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Minor	Latitude, Longitude:	

## Administrative Information

Investigator In Charge (IIC):	HECTOR R CASANOVA	Adopted Date:	11/30/1995
Additional Participating Persons:	GEORGE J COMBS; OKLAHOMA CITY, OK		
Publish Date:			
Investigation Docket:	NTSB accident and incident docket 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.