Aviation Investigation Final Report

Location:	BOWLING GREEN, Ohio	**Accident Number:**	NYC97LA061
Date & Time:	March 23, 1997, 13:41 Local	**Registration:**	N6561P
Aircraft:	Piper PA-24-250	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	2 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The airplane was vectored in instrument meteorological conditions (IMC) for a VOR Runway 18 Approach to the destination airport. The pilot reported the airport in sight, and was cleared for a visual approach. However, while descending, ice had accumulated on the flight control surfaces that was visible to the pilot. On final approach to the 2,627 foot runway, the pilot elected to go around. She initiated the go-around because the runway appeared 'icy,' and she feared she would be unable to stop before encountering a fence and highway at the departure end. The pilot intended to land on a perpendicular runway after the go-around. The landing gear and flaps were retracted, and full power was applied, but the pilot was unable to maintain flight and landed in a field beyond the highway.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the pilot's improper planning/decision, which resulted in airframe ice and the loss of adequate lift to maintain continued flight. The adverse weather (icing) condition was a related factor.

Findings

Occurrence #1: IN FLIGHT ENCOUNTER WITH WEATHER
Phase of Operation: DESCENT - NORMAL

Findings
1. (F) WEATHER CONDITION - ICING CONDITIONS

Occurrence #2: FORCED LANDING
Phase of Operation: GO-AROUND (VFR)

Findings
2. (C) PLANNING/DECISION - IMPROPER - PILOT IN COMMAND
3. (C) AIRFRAME - ICE
4. GO-AROUND - ATTEMPTED - PILOT IN COMMAND
5. CLIMB - NOT POSSIBLE

Occurrence #3: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: EMERGENCY LANDING

Factual Information

On March 23, 1997, at 1341 eastern standard time, a Piper PA-24-250 Commanche, N6561P, sustained substantial damage during a forced landing after a go-around at the Wood County Airport, Bowling Green, Ohio. The commercial pilot and one passenger were not injured. Instrument meteorological conditions prevailed and a composite VFR/IFR flight plan was filed. The personal flight conducted under 14 CFR Part 91 originated in Albany, New York, approximately 1000, destined for Wood County Airport (1G0).

According to the pilot, "I informed [Cleveland] Center that the winds were stronger than forecast and I was concerned about fuel. I was told that I could get into Toledo Express (TOL) and was vectored accordingly and told to descend to 4,000. Upon leveling at 4,000 feet, I began to encounter light rime icing on the windshield and leading edges of my wings." The pilot requested and received a lower altitude assignment in search of warmer air temperatures and to conserve fuel. She then changed frequencies to Toledo Approach Control.

Review of the transcription of the voice recordings between the Toledo Approach controller and N6561P revealed that upon initial contact, the pilot stated, "...at this point we're running a little low on fuel. If we can get into Wood (1G0) that would be fine. Otherwise, we had filed secondarily for...Toledo Express." The pilot made no other comment about fuel state nor did she declare an emergency.

The airplane was vectored around weather and discussion of landing options continued between N6561P and the approach controller. The pilot ultimately chose to land at Wood County Airport. The airplane was vectored for the VOR Runway 18 approach at 1G0. Approximately 1334, the pilot reported she had "ground contact" but was in and out of the clouds. At 1334:11, the controller asked, "...still want to do the VOR or would you like to [go] back toward the airport...see if you get the airport in sight." The pilot responded, "You can vector me back. We'll do that." At 1335:10, the pilot advised she had the airport in sight and was given a frequency change to the 1G0 advisory frequency.

The pilot explained that throughout the descent the airplane was "...encountering freezing rain and large, wet, freezing 'slush flakes'. The runway appeared to be icy and I was concerned that I may not be able to maintain directional control nor be able to stop."

The pilot said she feared encountering the fence and the highway at the departure end of runway 18 and decided to go around and attempt a landing on Runway 09-27. She reported that with gear and flaps retracted and full power applied, the airplane began to descend. The pilot further stated:

"With full power, we were barely maintaining level flight, and the controls were very 'mushy'. I

looked out my window and saw several inches of milky, rough-surfaced ice on the leading edge and underside of the wing."

The pilot stated she maneuvered to avoid a parking lot full of vehicles and a university field house. She then reduced power and performed a precautionary landing to a parade field with the landing gear retracted. According to a wreckage diagram prepared by the Ohio State Highway Patrol, the airplane collided with terrain approximately 1,100 feet beyond the departure end of Runway 18; 400 feet left of centerline.

According to the Piper Owner's Handbook, the landing ground roll for the PA-24 on a dry runway was approximately 1,000 feet. Runway 18 at 1G0 was 2,627 feet long.

The Federal Aviation Administration (FAA) Advisory Circular 91-51-A states: "The most hazardous aspect of structural icing is its aerodynamic effects. Ice can alter the shape of an airfoil ... change the angle of attack at which an aircraft stalls, and cause the aircraft to stall at a significantly higher airspeed. Also, if the extra weight caused by ice accumulation is too great, the aircraft may not be able to become airborne and, if in flight, the aircraft may not be able to maintain altitude."

The pilot reported there were no mechanical deficiencies with the airplane. An examination of the airplane by an FAA Airworthiness Inspector revealed approximately 4 gallons of fuel in the right tank and no fuel in the left tank.

Pilot Information

Certificate:	Commercial	**Age:**	42,Female
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 2 Valid Medical--no waivers/lim.	**Last FAA Medical Exam:**	April 18, 1995
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	711 hours (Total, all aircraft), 427 hours (Total, this make and model), 622 hours (Pilot In Command, all aircraft), 20 hours (Last 90 days, all aircraft), 10 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N6561P
Model/Series:	PA-24-250 PA-24-250	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	24-1683
Landing Gear Type:	Retractable - Tricycle	**Seats:**	4
Date/Type of Last Inspection:	January 20, 1997 Annual	**Certified Max Gross Wt.:**	2800 lbs
Time Since Last Inspection:	20 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	3440 Hrs	**Engine Manufacturer:**	Lycoming
ELT:	Installed, not activated	**Engine Model/Series:**	O-540-A1C5
Registered Owner:	ROSEMARY J. LOGIUDICE	**Rated Power:**	250 Horsepower
Operator:		**Operating Certificate(s) Held:**	None
Operator Does Business As:		**Operator Designator Code:**	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument (IMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	TOL ,684 ft msl	**Distance from Accident Site:**	14 Nautical Miles
Observation Time:	13:51 Local	**Direction from Accident Site:**	325°
Lowest Cloud Condition:	Unknown	**Visibility**	2 miles
Lowest Ceiling:	Overcast / 700 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	13 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	30°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30 inches Hg	**Temperature/Dew Point:**	-1°C / -2°C
Precipitation and Obscuration:	N/A - None - Fog		
Departure Point:	ALBANY , NY (ALB)	**Type of Flight Plan Filed:**	VFR/IFR
Destination:	(BWG)	**Type of Clearance:**	VFR;IFR
Departure Time:	10:00 Local	**Type of Airspace:**	Class G

Airport Information

Airport:	BOWLING GREEN WOOD COUNTY 1G0	**Runway Surface Type:**	Asphalt
Airport Elevation:	673 ft msl	**Runway Surface Condition:**	Slush covered;Wet
Runway Used:	18	**IFR Approach:**	None
Runway Length/Width:	2627 ft / 50 ft	**VFR Approach/Landing:**	Go around;Straight-in

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 None	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 None	**Latitude, Longitude:**	41.369194,-83.639198(est)

Administrative Information

Investigator In Charge (IIC):	Rayner, Brian
Additional Participating Persons:	PHIL M STEELE; CLEVELAND , OH JAMES DAVIDSON; CLEVELAND , OH
Original Publish Date:	September 4, 1998
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=39333