



National Transportation Safety Board Aviation Accident Final Report

Location:	ROGERS, AR	Accident Number:	FTW99LA103
Date & Time:	03/30/1999, 1147 CST	Registration:	N508GP
Aircraft:	Gates Learjet 35A	Aircraft Damage:	Substantial
Defining Event:		Injuries:	2 Minor, 8 None
Flight Conducted Under:	Part 135: Air Taxi & Commuter - Non-scheduled		

Analysis

A high rate of descent developed on final approach, and the turbojet touched down hard 12 feet short of the landing threshold. The left main landing gear separated after impacting the concrete foundation supporting the runway's approach lighting system. The captain reported that 'an unusual descent rate developed on short final approach,' and he tried to arrest the rate of descent. According to cockpit voice recorder information, about 33 seconds before ground impact, the first officer (FO) commented 'ref [reference speed] ten, sinking a thousand.' The captain had 3,100 flight hours, of which a total of 50 hours were in a Learjet. The FO had 14,000 flight hours, of which 2,100 hours were in a Learjet. Several passengers stated that 'the landing was very hard.' Some of the passengers stated that they felt a 'sinking sensation or downdraft' on final approach. The winds were reported from 150 degrees at 13 knots, with gusts to 19 knots. The pilot of a single engine airplane that landed at the airport 30 minutes prior to the accident reported a 15 to 20 knot loss in airspeed while on final approach.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's failure to maintain the proper descent rate, his failure to attain the proper touchdown point and the flightcrew's delay in taking remedial action. A factor was the downdraft.

Findings

Occurrence #1: UNDERSHOOT

Phase of Operation: LANDING - FLARE/TOUCHDOWN

Findings

1. (F) WEATHER CONDITION - DOWNDRAFT
2. (C) PROPER DESCENT RATE - NOT MAINTAINED - PILOT IN COMMAND
3. (C) REMEDIAL ACTION - DELAYED - FLIGHTCREW
4. (C) PROPER TOUCHDOWN POINT - NOT ATTAINED - PILOT IN COMMAND

Occurrence #2: ON GROUND/WATER COLLISION WITH OBJECT

Phase of Operation: LANDING - FLARE/TOUCHDOWN

Findings

5. AIRPORT/FACILITIES - OTHER
6. LANDING GEAR,MAIN GEAR - COLLAPSED

Factual Information

On March 30, 1999, approximately 1147 central standard time, a Gates Learjet 35A turbojet airplane, N508GP, was substantially damaged when the airplane undershot the threshold for Runway 19 while landing at the Rogers Municipal Airport (ROG), near Rogers, Arkansas. The airplane was registered to the Frazier Group Corporation of Mooresville, North Carolina, and being operated by Piedmont Hawthorne Aviation, Inc., of Winston Salem, North Carolina, under 14 Code of Federal Regulations (CFR) Part 135. The airline transport rated captain and seven of the passengers were not injured. The first officer and one of the passengers sustained minor injuries. Visual meteorological conditions prevailed for the on-demand air taxi flight for which an IFR flight plan was filed. The 671 nautical mile cross country flight originated from the Smith Reynolds Airport (INT), near Winston Salem, North Carolina, about 1000.

The flight was chartered by a major corporation to transport 8 of their executives to Rogers, Arkansas, for a meeting scheduled in nearby Bentonville, Arkansas. The return flight to INT was scheduled to depart ROG at 1630 local.

In the narrative portion of the enclosed NTSB Form 6120.1/2, the captain, who was the pilot flying, stated that after departing INT, the flight was cleared to FL350. Upon reaching the Rogers area, a normal descent profile was performed. The first officer received the automated weather observation service (AWOS) information twice during the approach. The AWOS reported that the wind was gusting no more than 8 knots. The flight was cleared for a visual approach to ROG. Once the runway was in sight, the IFR flight plan was cancelled, and the flight continued on the visual approach using the localizer and glide slope as reference along with the VASI. The captain added that a "stabilized approach was maintained after completing the pre-landing checklist. The captain reported that "an unusual descent rate developed on short final approach." The captain added that "he tried to arrest the rate of descent and the aircraft landed a few feet short of the runway."

The transport category aircraft was equipped with a Fairchild A-100A cockpit voice recorder (CVR), part number 93-A100-80, serial number 55620. The CVR was shipped to the NTSB audio laboratory in Washington, D.C., where a CVR group was convened on April 8, 1999. The group prepared a transcript of the last 11 minutes and 54 seconds of the flight. The CVR was released to the operator's representative who hand carried the recorder back to the operator. A copy of the report is enclosed.

According to recorded information from the airplane's CVR, at 1146:27, about 33 seconds before ground impact, the first officer commented "ref [reference speed] ten, sinking a thousand." About 4 seconds prior to impact, the first officer called out the winds as "one twenty at twelve." About a second before impact, the first officer exclaimed "watch it watch it watch it!"

The CVR also revealed that the crew did not conduct a briefing prior to initiating the visual approach. The first officer stated during the descent that he had been to the Rogers Airport twice before.

Ground scars and physical evidence at the accident site revealed that the airplane touched down 12 feet short of the landing threshold for runway 19. Both main landing gears impacted the concrete foundation supporting the green lights for the runway's medium intensity approach lighting system. The 2-foot wide concrete foundation, which protruded an average of

3 inches above the surrounding ground, was located 9 feet short of the landing threshold of the runway.

The airplane traveled for approximately 1,700 feet before coming to rest on a southwesterly heading, on the east side of the 6,011 foot asphalt runway.

Examination of the 1981 airplane by FAA inspectors who responded to the accident site revealed structural damage to the fuselage and the left wing. The left main landing gear separated from the airframe. The landing gear subsequently struck the left trailing edge flap, the left engine, and the leading edge of the left horizontal stabilizer. The left fuel cell was also damaged. A considerable amount of fuel spilled from the left fuel cell; however, there was no fire.

The 31-year-old captain had accumulated a total of 3,100 flight hours, of which 50 hours were in a Learjet, all within the preceding 90 days. The 57-year-old first officer had accumulated a total of 14,000 flight hours, with approximately 2,100 hours in a Learjet, of which 25 hours were accumulated during the preceding 90 days.

Passenger statements were sent to the 8 passengers aboard the airplane. Reports were received from 7 of the 8 passengers. All of the passengers had made numerous trips in Learjets and similar corporate/executive transport airplanes. Many had flown the same route in similar aircraft several times. Most of the passengers stated that "the landing was very hard." One passenger stated that it was the "hardest landing I had ever experienced."

Several passengers stated that they felt a "sinking sensation or downdraft" on final approach. They stated that they heard the sound of the engine power increase as the pilot attempted to arrest the descent prior to impact with the ground. One passenger, who was seated in the aft row facing forward, stated that "the plane was buffeted by the wind and suddenly we were slammed to the ground."

The passengers all concurred that the first officer had the top portion of the main cabin door opened within 15 to 20 seconds after the airplane came to a complete stop. All of the passengers reported that the evacuation was conducted in a "calm and orderly fashion" through the main cabin exit on the left side of the airplane.

One passenger reported opening the emergency escape hatch (right side of the cabin) as soon as the airplane came to a stop; however, the hatch was binding with the interior plastic trim of the airplane. Another passenger reported that his evacuation was delayed a few seconds by having to fight his way through all the carry-on luggage and briefcases that were on the cabin floor. This passenger suggested that all baggage and briefcases should be stowed in the aircraft's baggage compartment.

Several passengers stated that the emergency response by personnel at the airport was slow. The passengers reported that the first person to arrive at the accident site was an individual in a golf cart. They added that a law enforcement unit did not arrive until 10 minutes after the accident, with the first fire truck arriving about 5 minutes later.

The enclosed police report revealed that a 911 call was received at 1156:53. The first EMS and fire department units arrived at the accident site at 1204, with the first police unit arriving at 1212. The report also revealed that the airport manager closed the airport at 1215.

The weather was clear with a visibility of 10 miles at the time of the accident. The winds were reported from 150 degrees at 13 knots, with gusts to 19 knots. The pilot of a single engine

airplane that landed at the airport 30 minutes prior to the accident reported a 15 to 20 knot loss in airspeed while on final approach.

A review of the load manifest for the flight revealed that the airplane was 656 pounds below its maximum allowable takeoff weight limit and within C.G. limits prior to departure from INT. The airplane was found to be within weight and C.G. limits at the time of the accident.

A review of the airframe and engine logbooks conducted by representatives of the FAA revealed no record of any uncorrected maintenance discrepancies. Additionally, the airframe and engines were found to be in compliance with applicable airworthiness directives. The examination revealed that the airplane had been added to the operator's certificate (PIDA-318B) on March 3, 1999, 27 days prior to the accident.

Pilot Information

Certificate:	Airline Transport; Flight Instructor	Age:	31, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	Airplane Multi-engine; Airplane Single-engine; Instrument Airplane	Toxicology Performed:	No
Medical Certification:	Class 1 Valid Medical--no waivers/lim.	Last Medical Exam:	10/27/1998
Occupational Pilot:	Last Flight Review or Equivalent:		
Flight Time:	3100 hours (Total, all aircraft), 50 hours (Total, this make and model), 2200 hours (Pilot In Command, all aircraft), 100 hours (Last 90 days, all aircraft), 37 hours (Last 30 days, all aircraft), 3 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	Gates Learjet	Registration:	N508GP
Model/Series:	35A 35A	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Transport	Serial Number:	424
Landing Gear Type:	Retractable - Tricycle	Seats:	10
Date/Type of Last Inspection:	12/10/1998, AAIP	Certified Max Gross Wt.:	18300 lbs
Time Since Last Inspection:	71 Hours	Engines:	2 Turbo Jet
Airframe Total Time:	7686 Hours	Engine Manufacturer:	Garrett
ELT:	Not installed	Engine Model/Series:	731-2-2B
Registered Owner:	PIEDMONT HAWTHORNE AVIATION	Rated Power:	3500 lbs
Operator:	FRAZIER GROUP	Air Carrier Operating Certificate:	On-demand Air Taxi (135)
Operator Does Business As:		Operator Designator Code:	PIDA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	ROG, 1358 ft msl	Observation Time:	1755 CST
Distance from Accident Site:	0 Nautical Miles	Direction from Accident Site:	0°
Lowest Cloud Condition:	Clear / 0 ft agl	Temperature/Dew Point:	18° C / 2° C
Lowest Ceiling:	None / 0 ft agl	Visibility	10 Miles
Wind Speed/Gusts, Direction:	13 knots/ 19 knots, 150°	Visibility (RVR):	0 ft
Altimeter Setting:	30 inches Hg	Visibility (RVV):	0 Miles
Precipitation and Obscuration:			
Departure Point:	WINSTON SALEM, NC (INT)	Type of Flight Plan Filed:	IFR
Destination:	(ROG)	Type of Clearance:	IFR
Departure Time:	1000 CST	Type of Airspace:	Class D

Airport Information

Airport:	ROGERS MUNICIPAL AIRPORT (ROG)	Runway Surface Type:	Asphalt
Airport Elevation:	1358 ft	Runway Surface Condition:	Dry
Runway Used:	19	IFR Approach:	Visual
Runway Length/Width:	6011 ft / 100 ft	VFR Approach/Landing:	Full Stop; Straight-in

Wreckage and Impact Information

Crew Injuries:	1 Minor, 1 None	Aircraft Damage:	Substantial
Passenger Injuries:	1 Minor, 7 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 Minor, 8 None	Latitude, Longitude:	

Administrative Information

Investigator In Charge (IIC):	HECTOR R CASANOVA	Adopted Date:	09/12/2000
Additional Participating Persons:	DAVID D STANFILL; LITTLE ROCK, AR		
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 pubinq@ntsb.gov , or at 800-877-6799. Dockets released after this date are available at http://dms.nts.gov/pubdms/ .		

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