



National Transportation Safety Board Aviation Accident Final Report

Location:	Telluride, CO	Accident Number:	CEN09LA116
Date & Time:	01/03/2009, 1659 MST	Registration:	N279AJ
Aircraft:	LEARJET 45XR	Aircraft Damage:	Substantial
Defining Event:	Runway excursion	Injuries:	1 Minor, 1 None
Flight Conducted Under:	Part 91: General Aviation - Positioning		

Analysis

The airplane and two-person crew departed on a positioning flight. The pilot-in-command was not flying the airplane and sat in the right seat. The second-in-command was the pilot flying and sat in the left seat. The accident occurred on the second attempt to land at the destination airport on a snow-covered runway. While descending for the airport, the pilot not flying the airplane called the runway in sight. After assessing that they were too high the pilot not flying convinced the pilot flying to circle the airplane down to land on the runway. Circling at speeds greater than allowed by the approach categories, the crew performed a 360-degree turn to align themselves with the runway. The pilot flying did not have the runway in sight, and was verbally assisted by the pilot not flying. Both pilots stated that they were aligned with the center of the runway. During the flare to touchdown the pilot flying reported an unexpected gust of wind from the left requiring a correction. The airplane touched down about 20 feet off and to the right of the runway edge. Substantial damage was sustained to the airplane's wing and fuselage.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The failure of both pilots to positively identify the runway prior to landing.

Findings

Personnel issues	Monitoring environment - Pilot (Cause) Monitoring environment - Copilot (Cause)
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Factual Information

HISTORY OF FLIGHT

On January 3, 2009, at 1659 mountain standard time (MST) a Learjet 45XR, N279AJ, sustained substantial damage during an off-runway landing at Telluride Regional Airport (KTEX), Telluride, Colorado. The airplane was owned by LJ279, LLC, Missoula, Montana, and operated by Aero Jet Services, Scottsdale, Arizona. The airline transport pilot in the left seat was not injured and the airline transport pilot in the right seat received minor injuries. Intermittent visual meteorological conditions were present at the time of the accident and an instrument rules flight plan was filed for the Title 14 Code of Federal Regulations Part 91 positioning flight. The cross-country flight originated at the Scottsdale Airport (KSDL), Scottsdale, Arizona, at 1503.

In a statement provided by the Pilot-In-Command (PIC), who was seated in the right seat, upon arrival at KTEX the weather was reported to be below minimums; the crew elected to hold over the CONES VOR and wait to see if weather conditions would improve. The crew was given instructions, by air traffic control, to hold as published and to expect further clearance (EFC) at 1630. When the weather improved to a visibility of 4 miles and a ceiling of 2,300 feet, the PIC requested a descent and approach to KTEX. The crew was unable to complete the first landing attempt and called for a missed approach back to the VOR. The pilot then requested a second attempt to land stating that "if we did not land, we would like to be sequenced to into KMTJ" (Montrose Regional Airport Montrose, Colorado), their alternate airport.

On the second approach, both crew members stated that they had acquired the runway environment; however, they were still too high for a visual approach. The crew elected to do a 360-degree, right, descending turn, in order to be in a better position for landing. On completion of the turn, they again affirmed the runway environment and alignment with the extended centerline of the runway. The airplane touched down and after full thrust reversers were deployed, the nose gear collapsed. The airplane began to slide in snow and came to a stop in an upright position.

In a statement provided by the pilot flying, at 4 nautical miles both pilots had the runway in sight. They were not in a position to make a normal descent to the runway so the PIC suggested a 360-degree turn. The pilot added that at the completion of the turn, she was aligned with the extended centerline. Additionally, the precision approach path indicator (PAPI) was to the left and the right side runway edge identifier lights were to the right of the intended flight path. During the round out, the pilot shifted her view to the end of the runway. Between the round-out to touchdown, the PIC was telling the pilot to get it down on the runway but at the same time she was correcting for an unexpected gust of wind from the left. She applied a correction to maintain runway centerline. As the main landing gear contacted the ground, the pilot felt that the landing was normal. When the nose gear entered the snow the pilot felt the airplane "roll." No unusual airplane and engine performance was mentioned in the pilot's report.

An on-scene investigation was conducted by a Federal Aviation Administration (FAA) inspector. The initial examination of the area indicated that the airplane had touched down about 20-feet to the right, and off, the runway. Additionally, the airplane's wings were torn from the fuselage. The tail section had separated just aft of the engines. No pre-impact anomalies with the airframe and engines were detected during the investigation.

PERSONNEL INFORMATION

Both pilots held Airline Transport Pilot certificates with type ratings in the Learjet 45. The pilot-in-command, who was seated in the right seat, was the pilot not flying (PNF). The second-in-command, who was seated in the left seat, was the pilot flying (PF).

METEOROLOGICAL INFORMATION

The cockpit voice recorder (CVR) was sent to Washington, DC, for download. The automated weather observations for KTEX were recorded on the AWOS. Below are three AWOS reports during the last 30 minutes of recording.

Observation 2330 Zulu (1630 local) was broadcasted prior to the crew beginning the first attempted approach. The observation reported winds from 260 at 4 knots, visibility 4 miles with light snow, scattered clouds at 300 feet, and an overcast ceiling at 1,700 feet.

Prior to going missed approach on the first landing attempt, observation 2338 Zulu (1638) reporting winds from 250 at 5 knots, visibility 2.5 miles with light snow, scattered clouds at 400 feet, a broken ceiling at 1,300 feet, and an overcast ceiling at 1,800 feet.

While conducting the second approach and prior to landing at KTEX, a partial AWOS excerpt reported a visibility of 4 miles with light snow, scattered clouds at 200 feet, a broken ceiling at 1,500 feet, and an overcast ceiling at 2,100 feet.

AIRPORT INFORMATION

Telluride Airport is a non-towered airport located at an elevation of 9,072 feet mean sea level. Runway 9/27 is a grooved, asphalt runway that is 6,870 feet long and 100 feet wide.

According to an excerpt from the CVR, the common traffic advisory frequency (CTAF) reported to the pilots that Telluride had "an inch and half of snow or so on the runway. We have not plowed it, we were waiting until tomorrow. We're scattered at 300, overcast at 1,700 and heavy snow."

A review of the Localizer/DME approach chart to runway 9 revealed that the approach is valid for category A and B aircraft; aircraft with reference landing speeds (V_{ref}) lower than 121 knots. The circling and straight-in minimum descent altitudes are both 11,100 feet mean sea level. The weather required for both the circling and straight-in approaches were listed as 2,100 feet ceiling and 2 miles visibility.

ADDITIONAL INFORMATION

A review of the manufacturer's recommended operating procedures manual revealed that the Lear 45 is normally a category C aircraft for approaches.

Cockpit Voice Recorder (CVR) information

The last thirty minutes of the flight was transcribed and provided in the public docket. Approximately 2 minutes from touchdown, the PNF states that he had the runway in sight. He asks the PF if she would like to try to circle the airplane down to land. The PF starts by saying "I don't..." but is cut off by the PNF saying "circle this way." The PF says "uuhhh...", followed by the PNF replying, "try it." Forty-four seconds prior to touchdown the PNF asks, "...see the lead-in light, ah, the blinker?" The PF responds "No, I don't see anything yet." The PNF states

"There's the runway." The PF replies, "Oh <expletive>, are you kidding me?" Twenty seconds prior to touchdown the PNF tells the PF "just put it down. Put it down." The PF replies "I'm trying. Where is it?" Eight seconds prior to touchdown the PNF says "I know you don't want to listen to me...put it down...don't float it...put it down."

Flight Data Recorder (FDR) information

The FDR was downloaded and plotted by the Vehicle Recorder Division of the Safety Board. A review of the plots showed that approximately 94 seconds before touchdown the airplane enters a right, descending 360-degree turn utilizing upwards of 48 degrees of bank with airspeeds varying from 132 to 147 knots. At 41 seconds from touchdown, both engines are set at 45-46 percent low pressure rotor (N1) and remained there. 10 seconds prior to touchdown the airplane reverses from a right bank to a left bank until 2.4 seconds from touchdown when the airplane again enters a right bank. The last recorded parameters within the one second prior to the nose wheel weight-on-wheels switch activation is the airplane traveling at 120 knots with a right bank between 1.5 and 2.3 degrees.

History of Flight

Landing	Loss of visual reference
Landing-landing roll	Runway excursion (Defining event)
Landing-flare/touchdown	Landing gear collapse Loss of control on ground

Pilot Information

Certificate:	Airline Transport	Age:	42, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Right
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 Without Waivers/Limitations	Last Medical Exam:	08/05/2008
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	09/22/2008
Flight Time:	4800 hours (Total, all aircraft), 1038 hours (Total, this make and model), 4330 hours (Pilot In Command, all aircraft), 55 hours (Last 90 days, all aircraft), 25 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Pilot Information

Certificate:	Airline Transport	Age:	36, Female
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 Without Waivers/Limitations	Last Medical Exam:	02/11/2008
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	10/23/2008
Flight Time:	3520 hours (Total, all aircraft), 831 hours (Total, this make and model), 3015 hours (Pilot In Command, all aircraft), 81 hours (Last 90 days, all aircraft), 27 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	LEARJET	Registration:	N279AJ
Model/Series:	45XR	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	45-279
Landing Gear Type:	Retractable - Tricycle	Seats:	8
Date/Type of Last Inspection:	11/10/2008, Conditional	Certified Max Gross Wt.:	21500 lbs
Time Since Last Inspection:		Engines:	2 Turbo Fan
Airframe Total Time:	2338 Hours	Engine Manufacturer:	Honeywell
ELT:	C126 installed, activated, did not aid in locating accident	Engine Model/Series:	TFE31-20BR-1B
Registered Owner:	LJ279 LLC	Rated Power:	3500 lbs
Operator:	Aero Jet Services	Air Carrier Operating Certificate:	On-demand Air Taxi (135)

Meteorological Information and Flight Plan

Observation Facility, Elevation:	KTEX, 9078 ft msl	Observation Time:	1638 MST
Distance from Accident Site:		Condition of Light:	Day
Direction from Accident Site:		Conditions at Accident Site:	Instrument Conditions
Lowest Cloud Condition:	Scattered / 400 ft agl	Temperature/Dew Point:	-6° C / -6° C
Lowest Ceiling:	Broken / 1300 ft agl	Visibility	2 Miles
Wind Speed/Gusts, Direction:	5 knots, 250°	Visibility (RVR):	
Altimeter Setting:	29.85 inches Hg	Visibility (RVV):	
Precipitation and Obscuration:	Light - Showers - Snow		
Departure Point:	Scottsdale, AZ (KDSL)	Type of Flight Plan Filed:	IFR
Destination:	Telluride, CO (KTEX)	Type of Clearance:	IFR
Departure Time:	1503 MST	Type of Airspace:	

Airport Information

Airport:	Telluride Regional Airport (KTEX)	Runway Surface Type:	Asphalt
Airport Elevation:	9078 ft	Runway Surface Condition:	Snow
Runway Used:	09	IFR Approach:	Circling; LDA
Runway Length/Width:	6870 ft / 100 ft	VFR Approach/Landing:	Full Stop

Wreckage and Impact Information

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

Administrative Information

Investigator In Charge (IIC):	William H Gamble	Adopted Date:	04/22/2010
Additional Participating Persons:	Lyndsay Carlson; Federal Aviation Administration; Salt Lake City, UT Lonnie Roberts; Aero Jet Services; Scottsdale, AZ Rex Williams; Bombardier; Wichita, KS		
Publish Date:	04/22/2010		
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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