National Transportation Safety Board
Aviation Accident Final Report

Location:	Del Rio, TX	**Accident Number:**	FTW03FA229
Date & Time:	09/19/2003, 1710 CDT	**Registration:**	N666TW
Aircraft:	Learjet 25B	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	1 Fatal, 1 Serious
Flight Conducted Under:	Part 91: General Aviation - Positioning		

Analysis

The cargo flight was cleared for a visual approach to the 5,000-foot long, by 150-foot wide asphalt runway. Based on estimated landing weight of the aircraft, the Vref was estimated at 116 KIAS. Air traffic Control (ATC) radar data revealed that the flight maintained a ground speed above 190 knots on final approach, to include the touchdown zone for runway 13. The first evidence of braking was noted at a point 1,247 feet from the departure end of the runway. Braking signatures on the asphalt as well as off the pavement were consistent with an operational anti-skid system. Witnesses at the airport also observed the airplane flying very fast and touching down long. Both crewmembers, the 4,689-hour captain and the 2,873-hour first officer, were familiar with the airport, and the flight was 20 minutes ahead of its scheduled arrival time. The airplane overran the departure end of runway 13, impacted the airport perimeter fence, proceeded across a roadway, took out another fence, and collided with two trees in a cemetery. The airplane was found to be within weight and balance limits for all phases of the flight. The installed cockpit voice recorder (CVR) was found not to be functional.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's misjudged distance and speed during the approach to landing, and his failure to obtain the proper touchdown point resulting in an overrun. A contributing factor was the pilot's failure to abort the landing.

Findings

Occurrence #1: OVERRUN
Phase of Operation: LANDING - ROLL

Findings
1. (C) DISTANCE/SPEED - MISJUDGED - PILOT IN COMMAND
2. (C) PROPER TOUCHDOWN POINT - NOT OBTAINED - PILOT IN COMMAND
3. (F) GO-AROUND - NOT PERFORMED - PILOT IN COMMAND

Occurrence #2: ON GROUND/WATER COLLISION WITH OBJECT
Phase of Operation: LANDING - ROLL

Findings
4. OBJECT - FENCE
5. OBJECT - TREE(S)
6. OBJECT - OTHER

Occurrence #3: FIRE/EXPLOSION
Phase of Operation: OTHER

Factual Information

HISTORY OF FLIGHT

On September 19, 2003, at 1710 central daylight time, a Learjet 25B, twin-turbo jet airplane, N666TW, operating as Ameristar Jet Charter Flight 982 was destroyed upon collision with trees and terrain when it overran the departure end of runway 13 while landing at the Del Rio International Airport (DRT), near Del Rio, Texas. The airline transport rated captain was fatally injured, and the airline transport rated pilot acting as first officer was seriously injured. Visual meteorological conditions prevailed for the 14 Code of Federal Regulations (CFR) Part 91 repositioning flight. The airplane was owned by Sierra American Corporation of Wilmington, Delaware, and was being operated by Ameristar Jet Charter, Inc., of Dallas, Texas, a 14 CFR Part 135 on-demand air taxi cargo operator. An instrument flight rules (IFR) flight plan was filed for the flight which originated from the El Paso International Airport (ELP) at approximately 1625, destined for DRT.

The operator reported that on the day of the accident the flight originated from Jackson Hole, Wyoming, early in the morning, making intermediate stops at Los Angeles, California, and El Paso, Texas. The flight was scheduled to arrive at DRT at 1730.

According to personnel at the airport, a transmission in the blind was heard on the Unicom, reported "Five miles north, landing 13." The airplane had been cleared by approach control for a visual approach to runway 13.

A witness who was standing outside the Fixed Base Operator (FBO) facilities at the airport stated that the airplane was "high and fast" and he was expecting the airplane to execute a go-around. A second witness, also on the airport ramp stated that the airplane was going so fast that he "thought the airplane was taking off instead of landing."

A third witness, who was doing some outdoor painting and was concerned with over-spraying aircraft on the ramp stated that he observed the wind sock at the time of the landing and he added that the airplane landed with a slight downwind. Another witness observed "that the airplane was going very fast" and noted that the airplane landed past Taxiway Charlie. Taxiway Charlie is located about 1,875-feet short of the departure end of Runway 13.

The pilot of a King Air on the ramp reported that he observed the airplane landing and that the flaps appeared to be fully extended. This witness reported that he did not hear the engines spool-up in an attempt to abort the landing.

The airplane overran the departure end of runway 13, impacted the airport perimeter fence, proceeded across a roadway, impacted another fence, struck two trees and displaced multiple headstones.

A person at the FBO that was monitoring the Unicom transmissions reported that a female voice was making all of the radio transmissions. The operator stated that the company policy is for the non-flying pilot (NFP) to make all of the radio calls, thus the captain was expected to be functioning as the flying pilot (FP).

No reported distress calls were received from the crew of the airplane prior to the accident.

PERSONNEL INFORMATION

The Captain

The 29-year old captain held an airline transport pilot certificate with the ratings of airplane multiengine land, commercial privileges for airplane single-engine land, and type ratings for DA-20 and LR-25. The captain's most recent first class medical certificate was issued on March 4, 2003, with a restriction "must wear corrective lenses" Federal Aviation Administration (FAA) medical records indicate that the pilot had waiver for a color vision deficiency.

The captain had been employed by the operator since August 31, 2000. According to the operator the pilot had accumulated a total of 4,689 hours, of which 2,889 hours were in multi-engine airplanes, with a total of 2,300 hours in jets. Company records revealed that the captain had accumulated a total of 1,348 hours in the make and model of the accident airplane, with 343 hours as pilot-in -command (PIC), and approximately 1,005 hours as second-in-command (SIC) in the same airplane. The captain had flown a total of 231.7 hours in the preceding 90 days, with 85 within the last 30 days, and 4.5 hours in the last 24-hours.

The captain's initial new hire training was completed on September 9, 2000. His transition training to the Learjet was also completed on September 9, 2000. His upgrade training to captain was completed on August 3, 2002. Last recurrent training was completed on March 21, 2003. The captain's last proficiency check indicated satisfactory performance in all areas.

The First Officer

The 38-year old first officer held an airline transport pilot certificate with the ratings of airplane multiengine land, commercial privileges for airplane single-engine land. The first officer's most recent first class medical was issued on June 9, 2003, without waivers or limitations.

According to the operator, the first officer had accumulated a total of 2,873-hours, of which 1,500 hours were in multi-engine airplanes, with 234 hours in the Learjet 25. The first officer had flown a total of 205 hours in the last 90 days, with 65 within the last 30 days and 4.5 hours in the last 24 hours.

Company records revealed that the captain had previously flown into DRT 83 times and the first officer had flown into DRT 25 times. The records also showed that this was the first time they had both flown into DRT as a crew.

Following the recovery from injuries sustained during the accident, the first officer was interviewed by the members of the accident investigation team; however, she stated that she did not have any recollection of the approach or landing during the accident sequence.

AIRCRAFT INFORMATION

The airplane, a 1973 model Learjet 25B, serial number 25B116, transport category airplane was powered by two General Electric CJ610-6 turbojet engines, which were rated at 2,950 pounds of thrust each. The airplane was not equipped with thrust reversers.

The airplane was being maintained in accordance with an FAA approved airworthiness inspection program (AAIP) under 14 CFR Part 135.419.

The airplane had accumulated a total of 15,363.8 hours and 12,706 cycles. The most recent 300-hour inspection was completed on May 20, 2003, at 15,108.2 aircraft hours. The next inspection was another 300 hour inspection, which was due in 20.2 hours. The inspection was targeted to be accomplished on September 30, 2003.

According to records maintained by the operator, the right engine was installed on the aircraft on July 17, 2002, and the left engine was installed on September 05, 2003. The right engine, serial number 241-008A had accumulated a total of 13,182.8 hours and 12,087 cycles since new, and 7,797 hours and 7,080 cycles since last overhaul. The time since the last hot section inspection was 284.1 hours and 223 cycles.

The left engine, serial number 251-460A, had accumulated a total of 13,337.8 hours and 14,618 cycles since new. The engine had accumulated a total of 10,499.3 hours and 10,108 cycles since its last overhaul. The time since the last hot section inspection was 1,086.5 hours and 1,746 cycles.

The operator reported that there were no open maintenance discrepancies at the time of the accident; however, one appropriately deferred Category D Minimum Equipment List (MEL) item, 34-8 (an inoperative transponder) was being carried.

The airplane was configured with seats for the two crewmembers. The pilot and the copilot seats were equipped with shoulder harnesses. The maximum takeoff weight for the airplane was reported at 15,000 pounds. The basic weight for the airplane was 8,097 pounds. The airplane fuel system was capable of carrying a maximum of 6,025 pounds of fuel. The takeoff weight at the time of departure from ELP was estimated to be 12,897 pounds. The estimated landing weight at the time of the accident at Del Rio was 11,838 pounds, which included approximately 3,800 pounds of fuel.

AERODROME INFORMATION

The Del Rio International Airport (DRT) is an uncontrolled airport featuring a single asphalt runway (13/31) which is 5,000-feet long and 100-feet wide. The elevation of Runway 13 at the approach end is 998 feet, while the elevation at the departure end is 995 feet. Runway 13 has a slight downslope until reaching Taxiway Charlie, and at that point, the elevation rises back to 995 feet at the end of the runway. The overrun area of the runway also features a slight upslope gradient (uphill). There was no evidence of rubber deposit contamination on the runway.

The airport has several published non-precision approaches. The primary approach for Runway 13 is a localizer approach. There are also two Very-High-Frequency Omnidirectional Range (VOR) approaches, a Non Directional Beacon (NDB) approach, and a Global Positioning system (GPS) approach. Personnel at the FBO reported that due to the airport's close proximity to the Mexican border, runway 13 was the designated primary (no wind) runway.

Runway 13 is equipped with a Precision Approach Path Indicator (PAPI) with a 3 degree slope angle. The PAPI is located on the right side of the runway. Navigational aids include the Kotti NDB, located approximately 6 nautical miles northwest of DRT, and the Laughlin VOR, located on the Laughlin Air Force Base, approximately 7.8 nautical miles east of DRT.

Other than a 30-foot section of the perimeter fence, there was no other damage to the airport property.

METEOROLOGICAL INFORMATION

At 1653, the automated surface observing system at DRT reported, wind variable at 4 knots, visibility 10 statute miles, sky clear, temperature 82 degrees Fahrenheit, dew point 63 degrees

Fahrenheit, and an altimeter setting of 30.03 inches of Mercury.

The density altitude was calculated by the Investigator-in-Charge to be 2,675 feet mean sea level (msl). Pressure altitude was calculated to be 898 feet msl.

Several eyewitnesses at or near the airport reported that the smoke from the aircraft fire rose straight up, suggesting very light winds.

FIRE

The cabin and cockpit area of the airplane was consumed by the post-impact fire. Most of the aircraft components including both engines, sustained some degree of thermal damage.

Local fire crews dispensed approximately 5 gallons of foam mixed with 1,200 gallons of water to extinguish the fire.

FLIGHT RECORDERS

The airplane was equipped with a cockpit voice recorder (CVR). The CVR was a Fairchild Weston Model GA100, part number GA100-0000, serial number 00631, manufactured in November of 1989. The recorder was transported to the NTSB Laboratories in Washington, DC. The flight in question was recorded; however, the recording was found to be of very poor quality and unserviceable for accident investigation purposes.

WRECKAGE AND IMPACT INFORMATION

The airplane impacted the top of the airport perimeter fence, the perimeter fence of a cemetery across the road from the airport, collided with multiple headstones and monuments at the cemetery, as well as destroying four mature cedar trees (height was approximately 65 feet and varied from 6 to 12 inches in diameter) on a heading of 130 degrees. The location of the accident site was 29 degrees 21.874 minutes North latitude and 100 degrees 55.047 minutes West longitude, recorded by a handheld GPS unit.

The airplane came to rest on a measured heading of 040 degrees approximately 1,604-feet southeast of the departure end of runway 13, slightly south of the runway centerline of runway 13. The total distance traveled by the airplane from the point of initial braking to the resting place of the main wreckage was approximately 2,850 feet.

Examination of the runway revealed the first evidence of braking on runway 13 was at a point approximately 1,247 feet from the departure end of runway 13, slightly east of the runway centerline. Evidence of continuous braking was observed on the runway, through the overrun area, across a roadway, and just short of the resting place of the main wreckage.

Examination of the main wreckage revealed all 3 landing gears were separated from the airframe during the accident sequence. No flat spots or severe scuffing were found on any of the 4 main gear tires. The brake pads for all wheel brakes were inspected and found to be within limits. Rubber deposits on the runway, identified as coming from the main landing gear tires, were consistent with constant application of brakes and anti-skid function. The anti-skid switch in the cockpit was found in the "on" position.

The main wreckage, consisting of the cockpit, main cabin, right wing, and aft section of the fuselage, came to rest approximately 100 feet from the initial point of ground impact with the trees and the headstones.

The wing spoilers were found in the stowed and locked position. The spoiler switch in the

cockpit was found in the "extend" position. The right wing flap, which remained attached to the right wing was found extended to about the 10 degrees setting. The left wing flap was found separated from the airplane. The flap handle was found in the neutral position. The flap gauge in the cockpit was found in the retracted (0 degrees). The flap actuators were both found near the retracted position. The rudder trim actuator was found in the neutral position.

Both engines remained attached to their respective mounts. Damage and signatures found on both engines were consistent with an operational engine. The fuel control levers on both fuel controls were found in the full open (full power) position. This condition is consistent with the breakage of the cables connecting the throttles and with their respective fuel control units.

Both ears were broken off on the captain's control wheel. The control wheel for the first officer was intact.

All the major components of the airplane were accounted for at the accident site. Flight and engine control continuity could not be established due to the severity of the damage to the fuselage during the impact sequence. Both thrust levers were found in the idle position. All engine controls were found connected on both engines.

The horizontal stabilizer trim was measured in a length that corresponded with an aircraft nose-down trim setting of 3.0 degrees.

The drag chute was found partially deployed in the tail cone area.

MEDICAL AND PATHOLOGICAL INFORMATION

Office of the Medical Examiner for Bexar County in San Antonio, Texas, performed an autopsy on the captain, on September 20, 2003. Specimens for toxicological tests were taken from the pilot by the medical examiner. No preexisting disease was found that would have contributed to the accident.

The FAA's Civil Aeromedical Institute's (CAMI) Forensic and Accident Research Center examined the specimens taken by the medical examiner. The toxicological tests for the pilot were positive for carbon monoxide. A level of 36% of carbon monoxide was detected in the blood. A level of 1.91 (ug/ml) of cyanide was detected in the blood.

SURVIVAL INFORMATION

According to the Del Rio Fire Department, the first fire/rescue unit arrived at the accident site within 3-minutes of the accident. A total of 6 units of the Val Verde County Rural Volunteer Fire Department arrived at the site to extinguish the aircraft fire as well as the surrounding grounds and trees.

Units of the Val Verde County Sheriff Department and the Texas Department of Public Safety arrived at the accident site within a minute of the arrival of the first fire-fighting unit.

The airplane was not equipped with an Emergency Locator Transmitter (ELT).

TESTS AND RESEARCH

The weight and balance for the airplane was calculated using figures provided by the operator, the flight plan and actual weights provided by medical authorities. The weight of the airplane at the time of departure from El Paso was estimated at 12,897 pounds and the Center of Gravity

(CG) of 23.9 of Mean Aerodynamic Chord (MAC). The estimated landing weight of the airplane at the time of the accident was 11,838 pounds with the CG of 22.5% of MAC. The airplane was found to be within weight and balance limits for all phases of the flight.

Based on an estimated landing weight of 11,000 pounds and a Vref of 116 knots.

Examination of the radar data collected from the Laughlin Air Force Base revealed that in the 50 seconds prior to the airplane crossing the threshold of runway 13, the accident airplane was on an approximate 6.3 degree descent angle at an average descent rate of 1,740 feet per minute and an average ground speed of 182 knots.

On July 20, 2004, the investigator-in-charge and a representative from the airframe manufacturer examined the left and right airspeed indicators that were installed on the accident aircraft. The left side airspeed indicator casing was burnt. The airspeed bug was observed at approximately 118 knots. The Mach bug was observed at Mach .76. The right side airspeed indicator casing was burnt. The airspeed bug was observed at approximately 112 knots. The Mach bug was observed at Mach .74

ADDITIONAL INFORMATION

The wreckage was released to an owner's representative on July 26, 2004.

Pilot Information

Certificate:	Airline Transport; Flight Instructor; Commercial	**Age:**	29, 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 Single-engine; Instrument Airplane	**Toxicology Performed:**	Yes
Medical Certification:	Class 1 Valid Medical--w/ waivers/lim.	**Last FAA Medical Exam:**	03/04/2003
Occupational Pilot:		**Last Flight Review or Equivalent:**	03/23/2003
Flight Time:	4689 hours (Total, all aircraft), 1348 hours (Total, this make and model), 231 hours (Last 90 days, all aircraft), 85 hours (Last 30 days, all aircraft), 4 hours (Last 24 hours, all aircraft)		

Co-Pilot Information

Certificate:	Airline Transport; Commercial	**Age:**	38, 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):	None	**Toxicology Performed:**	No
Medical Certification:	Class 1 Valid Medical--no waivers/lim.	**Last FAA Medical Exam:**	06/09/2003
Occupational Pilot:		**Last Flight Review or Equivalent:**	02/13/2003
Flight Time:	2783 hours (Total, all aircraft), 263 hours (Total, this make and model), 2094 hours (Pilot In Command, all aircraft), 205 hours (Last 90 days, all aircraft), 65 hours (Last 30 days, all aircraft), 5 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Learjet	**Registration:**	N666TW
Model/Series:	25B	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	No
Airworthiness Certificate:	Transport	**Serial Number:**	25-116
Landing Gear Type:	Retractable - Tricycle	**Seats:**	2
Date/Type of Last Inspection:	05/20/2003, AAIP	**Certified Max Gross Wt.:**	15000 lbs
Time Since Last Inspection:	279.8 Hours	**Engines:**	2 Turbo Jet
Airframe Total Time:	15363.8 Hours at time of accident	**Engine Manufacturer:**	General Electric
ELT:	Not installed	**Engine Model/Series:**	CJ610-6
Registered Owner:	Sierra American Corporation	**Rated Power:**	2950 lbs
Operator:	Ameristar Jet Charter, Inc.	**Operating Certificate(s) Held:**	On-demand Air Taxi (135)
Operator Does Business As:		**Operator Designator Code:**	HAEA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	**Condition of Light:**	Day
Observation Facility, Elevation:	DRT, 995 ft msl	**Distance from Accident Site:**	0 Nautical Miles
Observation Time:	1653 CDT	**Direction from Accident Site:**	130°
Lowest Cloud Condition:	Clear	**Visibility**	10 Miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	4 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	Variable	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.03 inches Hg	**Temperature/Dew Point:**	28°C / 17°C
Precipitation and Obscuration:			
Departure Point:	EL PASO, TX (ELP)	**Type of Flight Plan Filed:**	IFR
Destination:	Del Rio, TX (DRT)	**Type of Clearance:**	IFR
Departure Time:	1625 CDT	**Type of Airspace:**	Class E

Airport Information

Airport:	Del Rio International (DRT)	**Runway Surface Type:**	Asphalt
Airport Elevation:	999 ft	**Runway Surface Condition:**	Dry
Runway Used:	13	**IFR Approach:**	Localizer Only; Visual
Runway Length/Width:	5000 ft / 100 ft	**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	1 Fatal, 1 Serious	**Aircraft Damage:**	Destroyed
Passenger Injuries:	N/A	**Aircraft Fire:**	On-Ground
Ground Injuries:	N/A	**Aircraft Explosion:**	On-Ground
Total Injuries:	1 Fatal, 1 Serious	**Latitude, Longitude:**	29.352222, -100.916667

Administrative Information

Investigator In Charge (IIC):	Hector R Casanova	**Report Date:**	09/29/2004
Additional Participating Persons:	Frank Fortmann; Federal Aviation Administration; San Antonio, TX Terrance Pearce; Bombardier Aerospace; Wichita, KS David Gridley; GE Aircraft Engines; Lynn, MA Teak Biondo; Ameristar Jet Charter Inc.; Dallas, TX		
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.ntsb.gov/pubdms/.		