



# National Transportation Safety Board Aviation Accident Final Report

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<b>Location:</b>	Jamestown, New York	<b>Accident Number:</b>	ERA09LA282
<b>Date &amp; Time:</b>	December 21, 2008, 01:00 Local	<b>Registration:</b>	N165TW
<b>Aircraft:</b>	DASSAULT/SUD FAN JET	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Runway excursion	<b>Injuries:</b>	2 None
<b>Flight Conducted Under:</b>	Part 135: Air taxi & commuter - Non-scheduled		

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## Analysis

The co-pilot was performing a nighttime approach and landing to runway 25. No runway condition reports were received by the flight crew while airborne, and a NOTAM was in effect, stating, "thin loose snow over patchy thin ice." After landing, the co-pilot called out that the airplane was sliding and the wheel brakes were ineffective. The captain took the controls, activated the air brakes, and instructed the co-pilot to deploy the drag chute. The crew could not stop the airplane in the remaining runway distance and the airplane overran the runway by approximately 100 feet. After departing the runway end, the landing gear contacted a snow berm that was the result of earlier plowing. The captain turned the airplane around and taxied to the ramp. Subsequent inspection of the airplane revealed a fractured nose gear strut and buckling of the fuselage. The spring-loaded drag chute extractor cap activated, but the parachute remained in its tail cone container. Both flight crewmembers reported that the runway was icy at the time of the accident and braking action was "nil." The airport manager reported that when the airplane landed, no airport staff were on duty and had not been for several hours. He also reported that when the airport staff left for the evening, the runway conditions were adequate. The runway had been plowed and sanded approximately 20 hours prior to the accident, sanded two more times during the day, and no measurable precipitation was recorded within that time frame. The reason that the drag chute failed to deploy was not determined.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The inability to stop the airplane on the remaining runway because of icy runway conditions. A factor was the failure of the drag chute to properly deploy.

## Findings

Aircraft	Surface speed/braking - Attain/maintain not possible
Environmental issues	Snow/slush/ice covered surface - Effect on operation
Aircraft	Drag control system - Failure

## Factual Information

On December 21, 2008, about 0100 eastern standard time, a Dassault Falcon 20, N165TW, was substantially damaged following a runway excursion after landing on runway 25 at the Chautauqua County/Jamestown Airport (JHW), Jamestown, New York. The airplane was registered to Sierra America Corporation and operated by Ameristar Jet Charter, Inc. The airline transport-rated pilot and commercial-rated co-pilot were not injured. Instrument meteorological conditions prevailed at the time, and an instrument flight rules flight plan was filed for the 14 Code of Federal Regulations Part 135 cargo flight. The flight originated at Tulsa International Airport (TUL), Tulsa, Oklahoma at 2200 central standard time.

The Director of Operations for Ameristar Jet Charter reported that during the landing roll at JHW, the airplane overran the runway and came to a stop approximately 100 feet into the runway overrun. During the excursion, the nose gear struck a snow berm at the end of the runway. The crew taxied the airplane to the ramp, where damage to the nose landing gear strut was discovered. Subsequent examination of the airplane by Dassault engineering personnel revealed wrinkling of the fuselage skin and a 0.5-inch separation in the nose gear bin assembly. The fuselage was buckled at frames 7 and 8 and the adjacent cargo door latch could not be closed due to fuselage deformation.

The operator reported that a Notice to Airmen (NOTAM) was issued by JHW for runway 7/25, reporting thin loose snow over patchy thin ice. The NOTAM was in effect at the time of the accident.

The captain provided a written statement and was interviewed by the NTSB investigator-in-charge (IIC). He reported that the co-pilot was flying the approach and landing at JHW. He briefed the co-pilot to land on speed and no longer than the 1,000 foot runway distance marker. The runway appeared normal for the time of year, and the runway surface was visible and not snow-covered. No braking action reports were available to the crew while airborne. The touchdown occurred near the reference speed of 122 knots, about 500 feet down the runway. After touchdown, the co-pilot called out, "I have no brakes, we are sliding, we are sliding." The captain took control of the airplane, activated the air brakes, and instructed the co-pilot to activate the drag chute. He estimated that the airspeed was "no less than 100 knots" when the drag chute was activated. The airplane continued down the runway and the captain realized the airplane would not stop in the remaining runway distance. He stated that the excursion was not violent, and the nose gear crossed over a snow berm at the end of the runway. He stated that crossing the berm was like "...hitting a bump." He turned the airplane around and taxied across the berm to the ramp. He described the runway conditions at the time of the accident as "a solid sheet of ice" and braking action was "nil." He stated that the runway was difficult to stand on. He contacted company operations personnel and instructed them to divert another company aircraft destined for JHW.

The co-pilot provided a written statement and was interviewed by the NTSB IIC. He confirmed the account of the captain, adding that the runway was a "sheet of ice." He reported that the drag chute did not deploy as expected; it was "barely hanging out" of its container.

The airplane drag chute was inspected by the operator's maintenance staff following the accident. The spring-activated extractor cap was found activated and hanging below the tail cone, still attached to the deployment lanyard. The parachute did not deploy and remained 90 percent inside its tail cone container. Further examination did not reveal any anomalies with the parachute or its packing. Maintenance records indicate that the last time the drag chute system was serviced or inspected was during a "2A" inspection on September 6, 2008. Records also indicate that the system was serviced or inspected during a "Z" inspection on August 15, 2007 and during a "C" inspection on August 2, 2005.

A review of the Dassault Aviation operating limitations for the Falcon 20 revealed no published minimum speed for drag chute deployment. Documentation provided by Dassault states that the drag chute should be deployed as soon as possible after landing.

The JHW airport manager was interviewed after the accident. He reported that N165TW arrived several hours after the airport staff had left for the evening. Prior to the accident, approximately 0400 on December 20, the airport crew arrived and found the runway covered with ice and snow, approximately 0.125 inches deep. Runway friction readings of 23/25/23 MU were observed. For runway friction measuring, the airport utilized a pickup truck with a cab-mounted Tapley decelerometer. The runway was then plowed and sanded over its full length. The airport does not use chemicals to deice the runway. After sanding, a runway friction test was performed and MU readings of 32/26/30 were observed. The airport manager reported that this was the only time on December 20 that the runway was plowed, and it was the last friction test performed that day. On December 20th, sand was also applied to the runway at 1230 and 1430. After the accident, airport staff found the runway "slick, but not ice-covered."

A review of pilot reports (PIREPS) received at JHW on December 20th revealed the following: a private jet pilot reported "fair" braking action at 0615, a Beech 1900 pilot reported "good" braking action at 0635, a Cessna 208 pilot reported "fair to good" braking action at 0915, and a Beech 1900 pilot reported "fair to good" braking action at 1330. Three flights landed at 0920, 1230, and 1335 and their crews did not make a report.

The Aeronautical Information Manual addresses runway friction readings. The Greek letter MU is used to designate a friction value representing runway surface conditions. For frozen contaminants on runway surfaces, a MU value of 40 or less is the level when aircraft braking performance starts to deteriorate and directional control begins to be less responsive. No correlation has been established between MU values and the descriptive terms "good," "fair," "poor," and "nil."

The 0055 weather observation for JHW included the following: overcast ceiling at 1,300 feet, surface winds calm, 10 statute miles visibility, temperature 18 degrees Fahrenheit (F), dew point 12 degrees F, and an altimeter setting of 29.68 inches of mercury.

A review of hourly weather observations for JHW revealed that no precipitation was recorded at the airport from 0500 on December 20 through 0100 on December 21. From 0100 on December 21 through 0700 on December 21, 0.01 inches of precipitation was recorded at the airport.

## History of Flight

Landing-landing roll	Runway excursion (Defining event)
Landing-landing roll	Collision with terr/obj (non-CFIT)

## Pilot Information

<b>Certificate:</b>	Airline transport; Flight instructor	<b>Age:</b>	24, Male
<b>Airplane Rating(s):</b>	Single-engine land; Multi-engine land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	Yes
<b>Instructor Rating(s):</b>	Airplane multi-engine; Airplane single-engine	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 1 Without waivers/limitations	<b>Last FAA Medical Exam:</b>	February 12, 2008
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	October 2, 2008
<b>Flight Time:</b>	3028 hours (Total, all aircraft), 1160 hours (Total, this make and model), 2215 hours (Pilot In Command, all aircraft), 111 hours (Last 90 days, all aircraft), 53 hours (Last 30 days, all aircraft)		

## Co-pilot Information

<b>Certificate:</b>	Commercial; Flight instructor	<b>Age:</b>	33, Male
<b>Airplane Rating(s):</b>	Single-engine land; Multi-engine land	<b>Seat Occupied:</b>	Right
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	Yes
<b>Instructor Rating(s):</b>	Airplane multi-engine; Airplane single-engine	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 1 Without waivers/limitations	<b>Last FAA Medical Exam:</b>	May 15, 2008
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	September 13, 2008
<b>Flight Time:</b>	2086 hours (Total, all aircraft), 80 hours (Total, this make and model), 1276 hours (Pilot In Command, all aircraft), 80 hours (Last 90 days, all aircraft), 23 hours (Last 30 days, all aircraft), 8 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	DASSAULT/SUD	<b>Registration:</b>	N165TW
<b>Model/Series:</b>	FAN JET FALCON 20	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	No
<b>Airworthiness Certificate:</b>	Transport	<b>Serial Number:</b>	65
<b>Landing Gear Type:</b>	Retractable - Tricycle	<b>Seats:</b>	3
<b>Date/Type of Last Inspection:</b>	September 6, 2008 AAIP	<b>Certified Max Gross Wt.:</b>	28660 lbs
<b>Time Since Last Inspection:</b>	114 Hrs	<b>Engines:</b>	2 Turbo fan
<b>Airframe Total Time:</b>	16360 Hrs at time of accident	<b>Engine Manufacturer:</b>	General Electric
<b>ELT:</b>	Installed, not activated	<b>Engine Model/Series:</b>	CF700-2D2
<b>Registered Owner:</b>		<b>Rated Power:</b>	4500 Lbs thrust
<b>Operator:</b>		<b>Operating Certificate(s) Held:</b>	On-demand air taxi (135)
<b>Operator Does Business As:</b>		<b>Operator Designator Code:</b>	HAEA

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Instrument (IMC)	<b>Condition of Light:</b>	Night
<b>Observation Facility, Elevation:</b>	JHW, 1723 ft msl	<b>Distance from Accident Site:</b>	
<b>Observation Time:</b>	00:55 Local	<b>Direction from Accident Site:</b>	
<b>Lowest Cloud Condition:</b>		<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>	Overcast / 1300 ft AGL	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	/	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>		<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	29.68 inches Hg	<b>Temperature/Dew Point:</b>	18° C / 12° C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	Tulsa, OK (TUL )	<b>Type of Flight Plan Filed:</b>	IFR
<b>Destination:</b>	Jamestown, NY (JHW )	<b>Type of Clearance:</b>	IFR
<b>Departure Time:</b>	22:00 Local	<b>Type of Airspace:</b>	

## Airport Information

<b>Airport:</b>	Chautauqua County/Jamestown JHW	<b>Runway Surface Type:</b>	Asphalt
<b>Airport Elevation:</b>	1723 ft msl	<b>Runway Surface Condition:</b>	Ice;Snow
<b>Runway Used:</b>	25	<b>IFR Approach:</b>	ILS;Visual
<b>Runway Length/Width:</b>	5299 ft / 100 ft	<b>VFR Approach/Landing:</b>	None

## Wreckage and Impact Information

<b>Crew Injuries:</b>	2 None	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>		<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	2 None	<b>Latitude, Longitude:</b>	42.153331,-79.254722(est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Hicks, Ralph
<b>Additional Participating Persons:</b>	Thomas McCormick; FAA/FSDO; Rochester, NY
<b>Original Publish Date:</b>	December 29, 2009
<b>Note:</b>	
<b>Investigation Docket:</b>	<a href="https://data.nts.gov/Docket?ProjectID=73778">https://data.nts.gov/Docket?ProjectID=73778</a>

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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. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).