



# Aviation Investigation Final Report

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<b>Location:</b>	Opa-Locka, Florida	<b>Accident Number:</b>	ERA11LA397
<b>Date &amp; Time:</b>	July 12, 2011, 13:20 Local	<b>Registration:</b>	N110UN
<b>Aircraft:</b>	GATES LEAR JET 35	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Windshear or thunderstorm	<b>Injuries:</b>	4 None
<b>Flight Conducted Under:</b>	Part 91: General aviation - Flight test		

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## Analysis

When the pilot made his initial radio contact with the tower air traffic controller, he acknowledged receiving the airport’s latest automatic terminal information service information. As the airplane approached the airport, the controller made several announcements that there was an area of weather about 5 miles in diameter with light-to-moderate precipitation over the airport. The pilot reported that, during the landing, at an altitude of about 30 feet above the runway, the airplane encountered windshear. The airplane started to roll to the left, and the airspeed decreased by 20 knots. As the pilot attempted to regain control of the airplane, the right wingtip contacted the runway surface. A review of high resolution automated surface observation system data from the airport indicated that, 2 minutes before the accident, the wind was from 338 degrees at 4 knots. Subsequently, there was a steady increase in wind velocity to 15 knots 4 minutes after the accident. During this 6 minute period, the wind direction varied between 353 degrees and 011 degrees. Terminal Doppler weather radar data indicated strong convective activity northwest of the airport from 2 minutes before to 10 minutes after the accident with possible micro bursts and diverging winds near the surface from the time of the accident to 5 minutes after the accident.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The flightcrew’s inadvertent encounter with windshear during landing, which resulted in a loss of control.

## Findings

<b>Environmental issues</b>	Windshear - Effect on equipment
<b>Aircraft</b>	Lateral/bank control - Attain/maintain not possible

## Factual Information

### History of Flight

<b>Landing-flare/touchdown</b>	Windshear or thunderstorm (Defining event)
<b>Landing-flare/touchdown</b>	Loss of control in flight
<b>Uncontrolled descent</b>	Collision with terr/obj (non-CFIT)
<b>Landing</b>	Abnormal runway contact

On July 12, 2011, about 1320 eastern daylight time, a Gate Lear Jet 35, N110UN, encountered windshear during landing at Opa-Locka Executive Airport (OPF), Opa-Locka, Florida. The pilot, copilot, and two passengers were not injured. The airplane incurred substantial damage. Visual meteorological conditions prevailed, and no flight plan was filed for the test flight, which was conducted under the provisions of 14 Code of Federal Regulations Part 91. The flight originated from OPF, about 1256.

The pilot stated that the intent of the flight was to test the airplane's systems for an upcoming flight. The departure from OPF was toward the northwest and they flew towards the Lake Okeechobee area, then towards the Naples area, and then flew back to OPF for a full stop landing. During the approach to runway 12 at OPF, rain was observed west of the airport. During the landing, at an altitude of about 30 feet above the runway, the airplane encountered windshear. The airplane started to roll to the left and the airspeed decreased by 20 knots. As the pilot attempted to regain control of the airplane, the right wingtip made contact with the runway surface. At that moment, he believed the airplane's position was almost perpendicular to the runway. He applied differential engine power and applied aggressive flight control inputs to stay on the runway. Once in control of the airplane, the pilot taxied toward the end of the runway, and off the active runway towards the operator's ramp area where the airplane came to a complete stop and was shutdown. Upon further inspection by the flight crew, it was discovered that the extension section (fuel tank) of the outboard right wing had separated from the wing attachment point and was hanging by the lower wing skin.

The pilot, age 43, held an Airline Transport pilot certificate, with ratings for airplane multiengine land, airplane single-engine land, LR-JET, HS-125, EA-500S, DA-10, and instrument airplane. In addition, he held a flight instructor certificate with ratings for airplane-single engine, airplane multiengine, and instrument airplane. The pilot reported that he accumulated 13,594 total hours of flight experience, of which, 1,100 hour were in the same make and model as the accident airplane. His most recent Federal Aviation Administration first-class medical certificate was issued on September 3, 2010.

The copilot, age 72, held a commercial pilot certificate, with ratings for airplane multiengine land, airplane single-engine land, and instrument airplane. The copilot reported that he accumulated 2,500 total hours of flight experience. His most recent Federal Aviation

Administration second-class medical certificate was issued on October 23, 2010.

Published information for runway 12/30 at OPF shows it as a grooved asphalt, 6800 foot long by 150 foot wide, with a 800 feet displaced threshold, at an elevation of 8 feet mean sea level (msl). Runway 12 is equipped with a visual slope indicator. The OPF airport is not equipped with a low level windshear alert system (LLWAS).

Audio recording from the OPF tower communication revealed the pilot acknowledged receiving the airport's latest Automatic Terminal Information Service (ATIS) when he made his initial radio contact with the controller when the flight was 16 miles west of the airport. The controller made several announcements on the airport traffic frequency that there was an area of weather 5 miles in diameters with light to moderate precipitation over the airport prior to the landing.

The airplane's cockpit voice recorder was retained and reviewed at the NTSB Recorders Laboratory; the event was captured. The adverse weather condition advisory from the OPF controller was captured as the flight crew were preparing for the landing on runway 12. There was nothing out of the normal or concerning heard during the approach to the runway. As the airplane was over the approach end of the runway, the stick shaker followed by 2 loud bangs, followed by the stick shaker again followed by 3 more loud bangs were heard. The pilot was heard stating "we lost the airspeed indicator".

The 1326 special recorded weather observation at OPF, included wind from 340 degrees at 15 knots gusting to 20 knots, visibility 8 miles, moderate rain, overcast clouds at 3,700 feet above ground level, temperature 29 degrees C, dew point 26 degrees C; altimeter 30.05 inches of mercury.

A review of high resolution automated surface observation system data from OPF indicated that at 1318, the wind was from 338 degrees at 4 knots. Then, there was a steady increase in wind velocity to 15 knots at 1324. During that time, the wind shifted between 353 degrees and 011 degrees.

Terminal Doppler weather radar data indicated strong convective activity northwest of the airport between 1318 and 1330. The data also identified possible micro bursts and diverging winds near the surface around 1320 to 1325 northwest of OPF.

As a result of this accident a direct line of communication has been established between the OPF tower and the National Oceanic and Atmospheric Administration's (NOAA), Miami, Florida, Center Weather Service Unit to disseminate hazard weather conditions that may affect operations at or near the OPF area.

## Pilot Information

<b>Certificate:</b>	Airline transport; Commercial; Flight instructor	<b>Age:</b>	43, 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; Instrument airplane	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 1 With waivers/limitations	<b>Last FAA Medical Exam:</b>	September 3, 2010
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	October 11, 2010
<b>Flight Time:</b>	13594 hours (Total, all aircraft), 1100 hours (Total, this make and model), 61 hours (Last 90 days, all aircraft), 14 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

## Co-pilot Information

<b>Certificate:</b>	Commercial	<b>Age:</b>	72, Male
<b>Airplane Rating(s):</b>	Single-engine land; Multi-engine land	<b>Seat Occupied:</b>	Right
<b>Other Aircraft Rating(s):</b>		<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	Yes
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 2 With waivers/limitations	<b>Last FAA Medical Exam:</b>	October 23, 2009
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	January 6, 2010
<b>Flight Time:</b>	2500 hours (Total, all aircraft), 1200 hours (Pilot In Command, all aircraft), 25 hours (Last 90 days, all aircraft), 10 hours (Last 30 days, all aircraft), 3 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	GATES LEAR JET	<b>Registration:</b>	N110UN
<b>Model/Series:</b>	35	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	007
<b>Landing Gear Type:</b>	Retractable - Tricycle	<b>Seats:</b>	8
<b>Date/Type of Last Inspection:</b>	February 15, 2011 Continuous airworthiness	<b>Certified Max Gross Wt.:</b>	18300 lbs
<b>Time Since Last Inspection:</b>	0 Hrs	<b>Engines:</b>	2 Turbo fan
<b>Airframe Total Time:</b>	19128 Hrs at time of accident	<b>Engine Manufacturer:</b>	AIRESEARCH
<b>ELT:</b>	C91A installed, not activated	<b>Engine Model/Series:</b>	TFE731 SER
<b>Registered Owner:</b>	Robinson Air Crane, Inc.	<b>Rated Power:</b>	3500 Lbs thrust
<b>Operator:</b>	Robinson Air Crane, Inc.	<b>Operating Certificate(s) Held:</b>	None

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	OPF,9 ft msl	<b>Distance from Accident Site:</b>	0 Nautical Miles
<b>Observation Time:</b>	13:26 Local	<b>Direction from Accident Site:</b>	0°
<b>Lowest Cloud Condition:</b>		<b>Visibility</b>	8 miles
<b>Lowest Ceiling:</b>	Overcast / 3700 ft AGL	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	15 knots / 20 knots	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	340°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	30.04 inches Hg	<b>Temperature/Dew Point:</b>	29°C / 26°C
<b>Precipitation and Obscuration:</b>	Light - None - Rain		
<b>Departure Point:</b>	Opa-Locka, FL (OPF)	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>	Opa-Locka, FL (OPF)	<b>Type of Clearance:</b>	None
<b>Departure Time:</b>	12:55 Local	<b>Type of Airspace:</b>	

## Airport Information

<b>Airport:</b>	Opa-Locka Executive OPF	<b>Runway Surface Type:</b>	Asphalt
<b>Airport Elevation:</b>	9 ft msl	<b>Runway Surface Condition:</b>	Dry
<b>Runway Used:</b>	12	<b>IFR Approach:</b>	Visual
<b>Runway Length/Width:</b>	6800 ft / 150 ft	<b>VFR Approach/Landing:</b>	Full stop

## Wreckage and Impact Information

<b>Crew Injuries:</b>	2 None	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>	2 None	<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	4 None	<b>Latitude, Longitude:</b>	25.907222,-80.278053(est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Obregon, Jose
<b>Additional Participating Persons:</b>	Edward Cardenas; FAA/FSDO; Miramar, FL
<b>Original Publish Date:</b>	November 7, 2012
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class</a>
<b>Note:</b>	
<b>Investigation Docket:</b>	<a href="https://data.ntsb.gov/Docket?ProjectID=81093">https://data.ntsb.gov/Docket?ProjectID=81093</a>

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The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, “accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person” (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available [here](#).