



AVIATION



HIGHWAY



MARINE



RAILROAD



PIPELINE

# Aviation Investigation Final Report

<b>Location:</b>	Miami, Florida	<b>Accident Number:</b>	ERA18LA112
<b>Date &amp; Time:</b>	March 21, 2018, 05:24 Local	<b>Registration:</b>	N90JE
<b>Aircraft:</b>	GULFSTREAM AEROSPACE G V	<b>Aircraft Damage:</b>	None
<b>Defining Event:</b>	Turbulence encounter	<b>Injuries:</b>	1 Serious, 2 Minor, 5 None
<b>Flight Conducted Under:</b>	Part 91: General aviation		

## Analysis

During their descent for arrival, the flight crew of the business jet illuminated the fasten seatbelt sign. They cycled the seatbelt sign again when the airplane began encountering light turbulence. After deviating left of some adverse weather that was displayed on radar, they continued their descent and encountered moderate turbulence and heavy rain, during which the airplane dropped about 500 to 1,000 ft. Despite the flight crew having warned the passengers by cycling the seatbelt sign during their descent from cruise altitude, three of the five passengers were not wearing seatbelts during the turbulence encounter. One of the unbelted passengers was seriously injured, while the other two incurred minor injuries. The flight subsequently landed without further incident.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

The passengers' failure to comply with the fasten seatbelt sign, with resulted in their injury during an inflight turbulence encounter.

## Findings

<b>Personnel issues</b>	Lack of action - Passenger
<b>Environmental issues</b>	(general) - Effect on personnel

# Factual Information

## History of Flight

Enroute-descent	Turbulence encounter (Defining event)
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On March 21, 2018, about 0524 eastern daylight time, a Gulfstream Aerospace Corporation G-V, N90JE, encountered turbulence while descending on approach to Miami International Airport (MIA), Miami, Florida. The two airline transport pilots and flight attendant were not injured. There were five passengers onboard, one sustained serious injuries, two sustained minor injuries, and two were uninjured. Night, instrument meteorological conditions prevailed, an instrument flight rules flight plan was filed. The flight was operated by Clover Aviation under the provisions of Title 14 *Code of Federal Regulations* Part 91. The flight departed Rio de Janeiro-Galeao International Airport (SBGL), Rio de Janeiro, Brazil, at 1050 eastern standard time.

According to the SIC (second-in-command), while descending from 27,000 ft to 12,000 ft approaching MIA, the PIC (pilot-in-command) turned on the seatbelt sign. While descending to 9,000 ft the PIC cycled the seatbelt sign again and they began to encounter "light chop." The PIC noted red cells on his weather radar, the SIC did not note any cells on his radar. He suggested to the PIC they maintain their present course because he could see Miami's coastline behind a small layer of clouds. The PIC requested a left deviation from air traffic control (ATC), and they turned 20° left and entered clouds as they continued the descent to 4,000 ft; the PIC cycled the seatbelt sign for the third time. During the descent they encountered moderate chop and heavy precipitation. About 7,000 ft they instantly dropped 500-1,000 ft. The turbulence was moderate for a moment and ended at 5,000 ft.

When they leveled off at 4,000 ft the flight attendant notified them some of the passengers may be injured. The crew notified ATC they had experienced moderate turbulence but did not notify them of the injured passengers. The three injured passengers did not have their seatbelts fastened at the time of the turbulence encounter.

The weather conditions reported at MIA included wind from 290° at 9 knots, visibility 10 statute miles, temperature 22° C, dew point 19° C, and an altimeter setting of 29.87 inches of mercury.

There were no Convective SIGMETs active for the event location at the event time. No lightning was detection associated with this convection.

## Pilot Information

<b>Certificate:</b>	Airline transport	<b>Age:</b>	52,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>	Unknown
<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>	Unknown	<b>Last FAA Medical Exam:</b>	
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	(Estimated) 5800 hours (Total, all aircraft)		

## Co-pilot Information

<b>Certificate:</b>	Commercial	<b>Age:</b>	30,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>	Instrument airplane	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 1 Without waivers/limitations	<b>Last FAA Medical Exam:</b>	December 19, 2017
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	February 5, 2018
<b>Flight Time:</b>	(Estimated) 5300 hours (Total, all aircraft)		

## Cabin crew Information

<b>Certificate:</b>		<b>Age:</b>	Female
<b>Airplane Rating(s):</b>		<b>Seat Occupied:</b>	Unknown
<b>Other Aircraft Rating(s):</b>		<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>		<b>Second Pilot Present:</b>	Yes
<b>Instructor Rating(s):</b>		<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>		<b>Last FAA Medical Exam:</b>	
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>			

## Passenger Information

Certificate:	Age:	Male
Airplane Rating(s):	Seat Occupied:	Right
Other Aircraft Rating(s):	Restraint Used:	None
Instrument Rating(s):	Second Pilot Present:	Yes
Instructor Rating(s):	Toxicology Performed:	No
Medical Certification:	Last FAA Medical Exam:	
Occupational Pilot:	No	Last Flight Review or Equivalent:
Flight Time:		

## Passenger Information

Certificate:	Age:	Male
Airplane Rating(s):	Seat Occupied:	Right
Other Aircraft Rating(s):	Restraint Used:	None
Instrument Rating(s):	Second Pilot Present:	Yes
Instructor Rating(s):	Toxicology Performed:	No
Medical Certification:	Last FAA Medical Exam:	
Occupational Pilot:	No	Last Flight Review or Equivalent:
Flight Time:		

## Aircraft and Owner/Operator Information

Aircraft Make:	GULFSTREAM AEROSPACE	Registration:	N90JE
Model/Series:	G V UNDESIGNAT	Aircraft Category:	Airplane
Year of Manufacture:	1998	Amateur Built:	
Airworthiness Certificate:	Transport	Serial Number:	552
Landing Gear Type:	Retractable - Tricycle	Seats:	17
Date/Type of Last Inspection:	Unknown	Certified Max Gross Wt.:	91500 lbs
Time Since Last Inspection:		Engines:	2 Turbo fan
Airframe Total Time:		Engine Manufacturer:	BMW ROLLS
ELT:		Engine Model/Series:	BR700-710A110
Registered Owner:		Rated Power:	14750 Horsepower
Operator:		Operating Certificate(s) Held:	None

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Instrument (IMC)	<b>Condition of Light:</b>	Night
<b>Observation Facility, Elevation:</b>	KMIA, 29 ft msl	<b>Distance from Accident Site:</b>	2 Nautical Miles
<b>Observation Time:</b>	08:53 Local	<b>Direction from Accident Site:</b>	254°
<b>Lowest Cloud Condition:</b>	Scattered / 4000 ft AGL	<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>	Broken / 7000 ft AGL	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	9 knots /	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	290°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	29.87 inches Hg	<b>Temperature/Dew Point:</b>	22°C / 19°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	Rio de Janeiro (SBGL)	<b>Type of Flight Plan Filed:</b>	IFR
<b>Destination:</b>	Miami, FL	<b>Type of Clearance:</b>	IFR
<b>Departure Time:</b>	10:50 Local	<b>Type of Airspace:</b>	Class B

## Wreckage and Impact Information

<b>Crew Injuries:</b>	3 None	<b>Aircraft Damage:</b>	None
<b>Passenger Injuries:</b>	1 Serious, 2 Minor, 2 None	<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	1 Serious, 2 Minor, 5 None	<b>Latitude, Longitude:</b>	25.795833,-80.285835(est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Hill, Millicent		
<b>Additional Participating Persons:</b>	Juan C Garcia; FAA/FSDO; Miramar, FL		
<b>Original Publish Date:</b>	December 3, 2020	<b>Investigation Class:</b>	3
<b>Note:</b>	The NTSB did not travel to the scene of this accident.		
<b>Investigation Docket:</b>	<a href="https://data.nts.gov/Docket?ProjectID=96907">https://data.nts.gov/Docket?ProjectID=96907</a>		

The National Transportation Safety Board (NTSB), established in 1967, is an independent federal agency mandated by Congress through the Independent Safety Board Act of 1974 to investigate transportation accidents, determine the probable causes of the accidents, issue safety recommendations, study transportation safety issues, and evaluate the safety effectiveness of government agencies involved in transportation. The NTSB makes public its actions and decisions through accident reports, safety studies, special investigation reports, safety recommendations, and statistical reviews.

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](#).