National Transportation Safety Board
Aviation Incident Data Summary

Location:	Teterboro, NJ	**Incident Number:**	ERA11IA006
Date & Time:	10/01/2010, 1334 EDT	**Registration:**	N923CL
Aircraft:	GULFSTREAM AEROSPACE G-IV	**Injuries:**	11 None
Flight Conducted Under:	Part 91: General Aviation - Executive/Corporate		

Analysis

The pilot-in-command (PIC) was the pilot flying and the copilot was the pilot monitoring. As the flight approached Teterboro Airport (TEB), Teterboro, New Jersey, the pilots received the current automated terminal information service data, which included visibility 2 miles in light rain and mist, ceiling 800 feet broken, and wind from 360 degrees at 6 knots, gusting to 16 knots. The pilots programmed the flight management system with the current data, which provided a reference speed (ref) of 136 knots. The approach was briefed and the PIC elected to add 10 knots to the Vref speed due to the wind conditions. The flight descended on a localizer approach for runway 6, a 6,013-foot-long, 150-foot wide, grooved asphalt runway. The autopilot was disconnected after the airplane descended through 1,000 feet mean sea level (msl) at Vref plus 10 knots. As the airplane descended through 700 feet msl, the copilot obtained a wind check from the tower controller, which indicated the wind was from 010 degrees at 15 knots, gusting to 25 knots. FDR data indicate that the airspeed slowed from Vref plus 10 knots to Vref, and the PIC disconnected the autothrottles about 645 feet msl, in an attempt to manually control the throttles and regain airspeed. The airspeed then fluctuated from Vref plus 5 knots to Vref plus 15 knots.

The copilot made airspeed callouts throughout the approach, which included Vref plus 15 as the airplane descended through 200 feet and Vref plus 15 again as the airplane was 40 feet above the runway. The airplane descended into ground effect at 150 to 160 knots, floated and bounced, before finally touching down with approximately 2,250 feet of runway remaining (as captured in airport surveillance video). The thrust reversers were timely deployed by the captain and operated correctly. The ground spoilers, brakes, and anti-skid system also operated correctly when automatically deployed; however, the airplane traveled off the end of the runway about 40 to 50 knots and came to rest 100 feet into an engineered materials arresting system. There was no mention of a go-around by either pilot during the flight.

According to the PIC's written statement, the airplane was at Vref speed, just prior to touchdown, when a gust of wind caused it to float. He further stated that at no point did either pilot believe there was not adequate runway remaining to continue the landing. After touchdown, at 80 knots, the PIC and copilot continued to believe the airplane would stop on the remaining runway; however, the airplane had floated about 65 percent of the length of the runway before touching down. During a subsequent telephone interview, the PIC remarked that a Vref plus 15 callout by the copilot, at 50 feet above the runway, would have been cause for an immediate go around; yet neither pilot called for one during the flight. According to the copilot's written statement, it was not apparent to him that the airplane might not stop on the runway until 400 to 500 feet before the end of the runway, when maximum braking and anti-skid were operating.

Data from the airplane manufacturer, for the estimated landing weight, revealed the airplane required a landing distance of approximately 2,820 feet on a dry runway, or 3,600 feet on a wet runway, without wind factored. Runway 1 at TEB is 7,000 feet long but does not have an instrument approach due to the proximity of Newark Liberty International Airport (EWR) airspace (EWR is 10 miles

southwest of TEB and has runways in excess of 10,000 feet). The approach to runway 6 has a circling approach to runway 1; however, at the time of the incident, the ceiling was below the circling approach minimums. The pilots could have remained airborne in a holding pattern a few minutes to evaluate whether the ceiling would lift sufficiently to fly the circling approach to the longer runway, they could have diverted to EWR, or they could have initiated a go-around to land on runway 6 when airspeed became excessive. Instead, they continued an unstabilized approach in gusting crosswind conditions and failed to initiate a go around when airspeed at the end of the approach became excessive.

Flight Events

Landing-flare/touchdown - Landing area overshoot
Landing-landing roll - Runway excursion

Probable Cause

The National Transportation Safety Board determines the probable cause(s) of this incident to be:
The pilot-in-command's failure to attain the proper touchdown point while landing with a gusting crosswind and failure to initiate a go-around, which resulted in a landing more than halfway down the runway and a subsequent runway overrun. Contributing to the incident was the failure of either pilot to call for a go-around when the airplane was at Vref plus 15 at 50 feet above the runway or once they had floated well beyond the touchdown zone of the runway.

Findings

Aircraft-Aircraft oper/perf/capability-Performance/control parameters-Airspeed-Not attained/maintained - C
Personnel issues-Action/decision-Action-Incorrect action performance-Pilot - C
Personnel issues-Task performance-Use of equip/info-Use of policy/procedure-Copilot - F
Personnel issues-Task performance-Use of equip/info-Use of policy/procedure-Pilot - F
Environmental issues-Conditions/weather/phenomena-Wind-Gusts-Effect on operation
Environmental issues-Conditions/weather/phenomena-Wind-Crosswind-Effect on operation

Pilot Information

Certificate:	Airline Transport; Flight Instructor; Commercial	**Age:**	39
Airplane Rating(s):	Multi-engine Land; Single-engine Land	**Instrument Rating(s):**	Airplane
Other Aircraft Rating(s):	None	**Instructor Rating(s):**	Airplane Multi-engine; Airplane Single-engine; Instrument Airplane
Flight Time:	7100 hours (Total, all aircraft), 759 hours (Total, this make and model), 76 hours (Last 90 days, all aircraft), 46 hours (Last 30 days, all aircraft), 9 hours (Last 24 hours, all aircraft)		

Co-Pilot Information

Certificate:	Airline Transport; Commercial	**Age:**	40
Airplane Rating(s):	Multi-engine Land; Single-engine Land	**Instrument Rating(s):**	Airplane
Other Aircraft Rating(s):	None	**Instructor Rating(s):**	Airplane Multi-engine; Airplane Single-engine; Instrument Airplane
Flight Time:	4500 hours (Total, all aircraft), 724 hours (Total, this make and model), 62 hours (Last 90 days, all aircraft), 46 hours (Last 30 days, all aircraft), 9 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	GULFSTREAM AEROSPACE	**Registration:**	N923CL
Model/Series:	G-IV	**Engines:**	2 Turbo Fan
Operator:	Avenue Capital Managment II	**Engine Manufacturer:**	ROLLS-ROYC
Air Carrier Operating Certificate:	None	**Engine Model/Series:**	TAY 611SER
Flight Conducted Under:	Part 91: General Aviation - Executive/Corporate		

Meteorological Information and Flight Plan

Observation Facility, Elevation:	KTEB, 9 ft msl	**Weather Information Source:**	Weather Observation Facility
Conditions at Accident Site:	Instrument Conditions	**Lowest Ceiling:**	Broken / 600 ft agl
Condition of Light:	Day	**Wind Speed/Gusts, Direction:**	12 knots/ 19 knots, 360°
Temperature:	17°C / 14°C	**Visibility**	3 Miles
Precipitation and Obscuration:	Light - Rain; No Obscuration		
Departure Point:	Toronto (CYYZ)	**Destination:**	Teterboro, NJ (KTEB)

Airport Information

Airport:	Teterboro Airport (KTEB)	**Runway Surface Type:**	Asphalt
Runway Used:	06	**Runway Surface Condition:**	Wet
Runway Length/Width:	6013 ft / 150 ft		

Wreckage and Impact Information

Crew Injuries:	3 None	**Aircraft Damage:**	Minor
Passenger Injuries:	8 None	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None

Administrative Information

Investigator In Charge (IIC):	Robert J Gretz	**Adopted Date:**	06/22/2011
Investigation Docket:	http://dms.ntsb.gov/pubdms/search/dockList.cfm?mKey=77485		