Aviation Investigation Final Report

Location:	Wheeling, Illinois	**Accident Number:**	GAA16LA086
Date & Time:	December 10, 2015, 17:05 Local	**Registration:**	N50VM
Aircraft:	HAWKER BEECHCRAFT CORP 390	**Aircraft Damage:**	Substantial
Defining Event:	Abnormal runway contact	**Injuries:**	7 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The first pilot, who was the owner of the light jet and had recently received a type rating in the airplane, was acting as pilot-in-command for the flight and was seated in the left seat. A second pilot, who was also type-rated and experienced in the airplane make and model and was accompanying the first pilot as a mentor, was seated in the right seat and handled radio communications throughout the flight. As they neared the destination airport for an approach to runway 16, the pilots received the most recent weather information, which included wind from 250 degrees at 16 knots (kts) with gusts to 29 kts. Shortly thereafter, another pilot on the frequency reported wind gusts of 50 kts upon landing. The first pilot expressed concern about landing in such windy conditions, but the second pilot encouraged him to continue. About 45 ft above the runway, the airplane experienced a strong gust of wind; the left wing impacted the ground, and the second pilot initiated a go-around. The second pilot then reconfigured the airplane for a landing on runway 30; the aural "wind shear" warning was sounding throughout the approach. Upon touchdown, the airplane's right main landing gear exited the runway surface and impacted the raised curb between the grass and taxiway surface. Both pilots reported that there were no preaccident airplane anomalies that would have precluded normal operation.

The maximum demonstrated crosswind component of the airplane was 25 kts. Given the reported wind conditions about the time of the accident, the crosswind component was at least 16 to 29 kts during the first landing attempt, and may have been greater based on the pilot report of gusts. Thus, the pilots should not have attempted the landing, because the gusts had the potential to exceed the airplane's maximum demonstrated crosswind component.

Probable Cause and Findings

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

The pilots' decision to conduct an approach and landing in gusting wind conditions, and their failure to maintain control of the airplane during the first approach, which resulted in a wing strike.

Findings

Personnel issues	Aircraft control - Pilot
Personnel issues	Aircraft control - Copilot
Aircraft	Lateral/bank control - Not attained/maintained
Aircraft	Directional control - Not attained/maintained
Personnel issues	Decision making/judgment - Pilot
Personnel issues	Identification/recognition - Copilot
Environmental issues	Gusts - Decision related to condition

Factual Information

History of Flight

Approach	Other weather encounter
Landing-flare/touchdown	Other weather encounter
Landing-flare/touchdown	Abnormal runway contact (Defining event)
Landing-aborted after touchdown	Attempted remediation/recovery
Takeoff	Other weather encounter
Approach-VFR pattern base	Windshear or thunderstorm
Landing-flare/touchdown	Runway excursion

This report was modified on January 26, 2017. Please see the public docket for this accident to view the original report.

On December 10, 2015, about 1705 central standard time, a Hawker Beechcraft Corp 390, N50VM, was substantially damaged during a landing attempt and subsequent hard landing at Chicago Executive Airport (PWK), Wheeling, Illinois. The pilot/owner, second pilot, and five passengers were not injured. Day visual meteorological conditions prevailed, and an instrument flight rules flight plan was filed for the personal flight, which originated at Monmouth Executive Airport (BLM), Farmingdale, New Jersey, about 1545. The airplane was privately owned and operated under the provisions of 14 Code of Federal Regulations Part 91.

The pilots each provided statements regarding the event. The first pilot (who was the owner) stated that he was acting as pilot-in-command for the flight, having recently attained a single-pilot type rating in the airplane make and model, and the second pilot was acting as a "co-pilot/mentor." The second pilot stated that he had been asked to join the pilot on the flight for a "sense of security," since he had several years of experience and was type-rated in the airplane make and model. During the flight, the first pilot manipulated the flight controls, and the second pilot handled radio communications with air traffic control (ATC).

The first pilot stated that they obtained the automated weather information for the airport, which reported wind from 250 degrees at 16 knots (kts), with gusts to 29 kts. According to the pilot, after stating to the second pilot that he was uncomfortable with the crosswind (they were landing on runway 16), the second pilot said he was comfortable and would land the airplane; the second pilot then encouraged the first pilot to attempt the landing and he would help. The second pilot stated that he told the first pilot several times to go around if he didn't feel comfortable at any point in the approach. Shortly thereafter, another pilot on the radio frequency reported to ATC that the wind was gusting to 50 kts. ATC then called the accident airplane to confirm that they had heard the wind report, and the second pilot, who was still handling the radio communications, confirmed that they had.

The first pilot stated that, about 45 ft above the runway, the airplane experienced a strong gust of wind and the second pilot "grabbed" the flight controls "without calling out, 'my plane.'" The left wing impacted the ground, and the second pilot initiated a go-around. The second pilot stated that he had called for a go-around prior to taking the flight controls, but that the first pilot "seemed to be frozen."

The second pilot then reconfigured airplane for landing on runway 30, and the first pilot stated that the aural "wind shear" warning was sounding throughout the approach. Upon touchdown, the airplane's right main landing gear exited the runway surface, then impacted the raised curb between the grass and taxiway surface. The first pilot resumed control, and taxied the airplane off of the taxiway. Examination revealed substantial damage to the right wing.

Both pilots reported that the airplane had no preaccident mechanical anomalies that would have precluded normal operation. In a written statement after the accident, the first pilot said he did not feel comfortable landing in the wind conditions present at the time of the accident, and, as pilot-in-command, he should have diverted to another airport with more favorable conditions.

The 1652 automated weather observation at PWK included wind from 250 degrees at 16 kts with gusts to 28 kts, 10 miles visibility, an overcast cloud layer at 3,500 ft, temperature 11 degrees C, dew point 4 degrees C, and an altimeter setting of 29.51 in of mercury. The observation included a peak wind from 260 degrees at 41 kts, recorded at 1640.

The first pilot held a private pilot certificate with ratings for airplane single- and multiengine land and instrument airplane as well as a type certificate in the accident airplane make and model. He reported 1,330 total hours of flight experience, of which 28 hours were in the accident airplane make and model. All 28 hours had been accrued in the 30 days before the accident.

The second pilot held an airline transport pilot certificate with a rating for airplane multiengine land as well as several type ratings, including in the accident airplane make and model. He reported 4,500 total hours of flight experience, of which 1,250 hours were in the accident airplane make and model.

PWK was equipped with three runways:16/34, 12/30, and 6/24. Runway 16/34 was 5,001 ft long by 150 ft wide; runway 12/30 was 4,415 ft long by 75 ft wide; and runway 6/24 was 3,677 ft long by 50 ft wide. The airport was equipped with an air traffic control tower, which was operating at the time of the accident.

According to the airframe manufacturer, the maximum demonstrated crosswind component for the airplane was 25 kts. Based on the ATIS information received before landing (250 degrees at 16 knots with gusts to 29 kts), the crosswind component at the time of the accident was between 16 and 29 kts for a landing on runway 16, and between 12 and 22 kts for a landing on runway 30. At the peak wind recorded by the automated observation, the crosswind component was about 41 kts for runway 16, and about 31 kts for runway 30.

Pilot Information

Certificate:	Private	**Age:**	41,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	4-point
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 With waivers/limitations	**Last FAA Medical Exam:**	April 18, 2014
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	November 25, 2015
Flight Time:	(Estimated) 1330 hours (Total, all aircraft), 28 hours (Total, this make and model), 1022 hours (Pilot In Command, all aircraft), 60 hours (Last 90 days, all aircraft), 32 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Co-pilot Information

Certificate:	Airline transport; Commercial; Private	**Age:**	40,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Right
Other Aircraft Rating(s):	Helicopter	**Restraint Used:**	4-point
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 2 Without waivers/limitations	**Last FAA Medical Exam:**	December 15, 2015
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	July 2, 2015
Flight Time:	(Estimated) 4500 hours (Total, all aircraft), 1250 hours (Total, this make and model), 4000 hours (Pilot In Command, all aircraft), 100 hours (Last 90 days, all aircraft), 40 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	HAWKER BEECHCRAFT CORP	**Registration:**	N50VM
Model/Series:	390 NO SERIES	**Aircraft Category:**	Airplane
Year of Manufacture:	2008	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	RB-229
Landing Gear Type:	Retractable - Tricycle	**Seats:**	8
Date/Type of Last Inspection:	October 1, 2015 Continuous airworthiness	**Certified Max Gross Wt.:**	12500 lbs
Time Since Last Inspection:	32 Hrs	**Engines:**	2 Turbo fan
Airframe Total Time:	2414.3 Hrs at time of accident	**Engine Manufacturer:**	WILLIAMS
ELT:	Installed, not activated	**Engine Model/Series:**	FJ44-2A
Registered Owner:	On file	**Rated Power:**	2300 Horsepower
Operator:	On file	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Dusk
Observation Facility, Elevation:	KPWK,636 ft msl	**Distance from Accident Site:**	0 Nautical Miles
Observation Time:	22:52 Local	**Direction from Accident Site:**	340°
Lowest Cloud Condition:		**Visibility**	10 miles
Lowest Ceiling:	Overcast / 3500 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	16 knots / 28 knots	**Turbulence Type Forecast/Actual:**	/ None
Wind Direction:	250°	**Turbulence Severity Forecast/Actual:**	/ N/A
Altimeter Setting:	29.51 inches Hg	**Temperature/Dew Point:**	11°C / 4°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	BELMAR/FARMINGDALE, NJ (BLM)	**Type of Flight Plan Filed:**	IFR
Destination:	CHICAGO/PROSPECT HEIGHTS/WHEELING, IL (PWK)	**Type of Clearance:**	IFR
Departure Time:	15:45 Local	**Type of Airspace:**	Class D

Airport Information

Airport:	CHICAGO EXECUTIVE PWK	**Runway Surface Type:**	Asphalt
Airport Elevation:	646 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	16	**IFR Approach:**	None
Runway Length/Width:	5001 ft / 150 ft	**VFR Approach/Landing:**	Full stop

Wreckage and Impact Information

Crew Injuries:	2 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	5 None	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	7 None	**Latitude, Longitude:**	42.114166,-87.901664(est)

Administrative Information

Investigator In Charge (IIC):	Hicks, Michael
Additional Participating Persons:	Timothy Harris; Federal Aviation Administration; Dupage, IL Allen Pattenaude; Federal Aviation Administration; Dupage, IL
Original Publish Date:	March 6, 2017
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=92478