National Transportation Safety Board
Aviation Accident Final Report

Location:	Jeffersonville, Indiana	**Accident Number:**	CEN17LA029
Date & Time:	October 30, 2016, 12:35 Local	**Registration:**	N411HA
Aircraft:	Beech 100	**Aircraft Damage:**	Substantial
Defining Event:	Runway excursion	**Injuries:**	10 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The airline transport pilot, who was the pilot flying, and commercial pilot, who was the pilot not flying and was acting as a safety pilot and was not expected to know the airplane's systems, limitations, or characteristics, were preparing to depart for a personal flight with eight passengers on board. When the pilot arrived at the airport, he determined that the airplane had 900 lbs of fuel onboard. He instructed the lineman to fuel the airplane with 211 gallons of fuel (1,413.7 lbs) for a fuel total of 2,313.7 lbs. The pilot reported that he was aware that the total weight of the eight passengers, their bags, and the fuel caused the airplane to be overweight but that he did not complete a weight and balance form or determine the expected takeoff performance before the flight. He informed the other pilot that the flight would be heavy, but he did not tell him how much the airplane exceeded the airplane's maximum gross takeoff weight. After the accident, the pilot determined that the airplane was 623 lbs over the maximum gross takeoff weight.

The pilot reported that the airplane's flight controls and engines were operating normally during the pretakeoff check and that the elevator pitch trim was positioned in the "green" range. The pilot taxied the airplane onto the runway and applied the brakes and increased the throttles to takeoff power before releasing the brakes for the takeoff roll. However, he did not confirm the power settings that he applied when he advanced the throttles.

The airplane did not accelerate as quickly as the pilot expected during the takeoff roll. When the airplane was about halfway down the runway, the airspeed was 80 kts, so the pilot continued the takeoff roll, but the airplane was still not accelerating as expected. He stated that he heard the other pilot say "redline," so he decreased the power. At this point, the airplane had reached the last third of the runway, and the pilot pulled back on the control yoke to lift the airplane off the runway, but the stall warning sounded. He lowered the nose, but the airplane was near the end of the runway. He added that he did not get "on" the brakes or put the propellers into reverse pitch and that the airplane then departed the runway. The pilot veered the airplane right to avoid the instrument landing system antenna, which was 500 ft from the end of the 5,500-ft-long runway, but the left wing struck the antenna, the left main landing gear and nose gear collapsed, and both propellers contacted the ground. The airplane then skidded left before stopping

about 680 ft from the end of the runway. The pilot reported that the airplane did not have any preaccident mechanical malfunctions or failures.

The evidence indicates that the pilot decided to depart knowing that the airplane was over its maximum gross takeoff weight and without determining the expected takeoff performance. During the takeoff roll, he did not check his engine instruments to determine if he had applied full takeoff power, although the acceleration may have been sluggish because of the excess weight onboard. The other pilot was not trained on the airplane and was not able to provide the pilot timely performance information during the takeoff. Neither the pilot nor the other pilot called out for an aborted takeoff, and when they recognized the need to abort the takeoff, it was too late to avoid a runway excursion.

Probable Cause and Findings

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

The pilot's inadequate preflight planning, his decision to take off knowing the airplane was over its gross takeoff weight, and his failure to abort the takeoff after he realized that the airplane was not accelerating as expected, which resulted in a runway excursion.

Findings

Aircraft	Takeoff distance - Incorrect use/operation
Personnel issues	Weight/balance calculations - Pilot
Personnel issues	Performance calculations - Pilot
Personnel issues	Lack of action - Pilot
Personnel issues	Decision making/judgment - Pilot
Personnel issues	Lack of action - Pilot
Aircraft	Maximum weight - Capability exceeded
Organizational issues	Initial training - Operator
Personnel issues	Lack of action - Copilot

Factual Information

History of Flight

Takeoff	Runway excursion (Defining event)
Takeoff	Collision with terr/obj (non-CFIT)
Takeoff	Landing gear collapse

On October 30, 2016, about 1235 eastern daylight time, a Beech 100, N411HA, sustained substantial damage during takeoff when it went off the departure end of runway 18 (5,500 ft by 100 ft, asphalt) at the Clark Regional Airport (JVY), Jeffersonville, Indiana. The pilot, copilot, and 8 passengers were not injured. The airplane was registered to RC AIR LLC and operated by Honaker Aviation under the provisions of the 14 Code of Federal Regulations as a Part 91 personal flight. Visual meteorological conditions prevailed at the time of the accident, and the flight was on an instrument flight rules flight plan. The flight was departing JVY and was en route to the McKinnon St. Simons Island Airport (SSI), Brunswick, Georgia.

The pilot reported that he had received a trip sheet the day prior to the flight that indicated he would be flying a group of 9 male golfers along with their golf clubs on the flight. The pilot contacted the operator and questioned the accuracy of the trip sheet since the Beech 100 had only 8 passenger seats. The operator informed the pilot that the trip sheet was sent to him in error and that the flight he was actually scheduled for was to take 8 female passengers and their luggage to Brunswick, Georgia. Additionally, although the Beech 100 was a single-piloted airplane, a copilot would be flying with him on the flight. The pilot reported that he was concerned about taking 8 passengers with their luggage and how much fuel he could put on the airplane for the flight. He typically flew with 1 – 4 passengers, and this was the first time he flew with 8 passengers filling all the passenger seats.

The pilot arrived at the airport the next morning and determined that the airplane had 900 lbs of fuel onboard. He instructed the lineman to fuel the airplane with 211 gallons of fuel (1,413.7 lbs) which brought the fuel total to 2,313.7 lbs (full fuel). That would ensure that he could fly to SSI without having to make a fuel stop en route. The pilot reported that he was aware that the total weight of the 8 passengers with their bags and the weight of the fuel caused the airplane to be overweight, but he did not complete a weight and balance form before the flight. Also, the bags were not weighed and the weights of the passengers were not determined. He informed the copilot that the flight would be heavy, but he did not tell him how much the it exceeded the maximum gross takeoff weight of the airplane.

The pilot reported that the airplane's flight controls and engines were operating normally during the pre-takeoff check, and the elevator pitch trim was positioned in the "green" range. He stated that he did not give the copilot a departure briefing so the copilot was unaware of the airspeed callouts or what power settings were required. The pilot taxied onto runway 18 and applied the brakes and increased the throttles to takeoff power before releasing the brakes for the takeoff roll. The pilot stated that he did not confirm the power settings that he applied when he advanced the throttles. He stated that the airplane did not accelerate as quickly as he expected during takeoff roll. The airplane was about 1/2 way down the runway and the airspeed was 80 kts, so he continued the takeoff roll but the airplane was still not accelerating as expected. He stated that he heard the copilot say "redline" so he decreased the power.

The airplane was in the last 1/3 of the runway and he pulled back on the control yoke to lift the airplane off the runway, but the stall warning sounded. He lowered the nose, but now the airplane was near the end of the runway. The pilot stated that he didn't get "on" the brakes or put the propellers into reverse pitch, and the airplane departed the runway. The pilot veered the airplane to the right to avoid an instrument landing system (ILS) antenna. The left wing hit the ILS antenna located 500 ft from the end of runway 18, and the left main gear and nose gear collapsed with both propellers contacting the ground. The airplane skidded back to the left before stopping about 680 ft from the end of the runway. Once the airplane stopped, the pilot opened the cabin door and assisted the passengers in evacuating the airplane. The copilot shut off the fuel to both engines and turned off the main battery bus. There was no post-crash fire.

The pilot reported that the airplane did not have a mechanical malfunction or failure before the accident occurred.

Pilot Information

Certificate:	Airline transport; Flight instructor	**Age:**	51,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	3-point
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	Airplane single-engine; Instrument airplane	**Toxicology Performed:**	No
Medical Certification:	Class 1 With waivers/limitations	**Last FAA Medical Exam:**	August 16, 2016
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	July 15, 2016
Flight Time:	13142 hours (Total, all aircraft), 34 hours (Total, this make and model), 10442 hours (Pilot In Command, all aircraft), 112 hours (Last 90 days, all aircraft), 26 hours (Last 30 days, all aircraft)		

Co-pilot Information

Certificate:	Commercial	**Age:**	55,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Right
Other Aircraft Rating(s):	None	**Restraint Used:**	3-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:**	January 8, 2016
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	March 28, 2016
Flight Time:	1605 hours (Total, all aircraft), 3 hours (Total, this make and model), 1305 hours (Pilot In Command, all aircraft), 73 hours (Last 90 days, all aircraft), 19 hours (Last 30 days, all aircraft)		

The 51-year-old pilot had an airline transport pilot certificate with single-engine land, multi-engine land,

and airplane instrument ratings. He also held a flight instructor certificate with airplane single-engine and airplane instrument ratings. He held a first class medical certificate issued on August 16, 2016. He had a total of 13,142 total flight hours with 34 hours in the Beech 100.

The pilot was hired by the operator, Honaker Aviation, on July 14, 2016. He stated that he went to Atlanta, Georgia, on July 15, 2016, for King Air 90/200 recurrent training. At Honaker Aviation, he flew the Beech F-90, Beech 100, and the Cessna Citation I. He had flown 117.2 hours since being hired. He flew 77.1 hours in the Beech 100, 33.9 hours in the Beech F-90, and 6.2 hours in the Citation I.

The pilot stated that he had flown about 7,900 hours in a the single-pilot Metroliner for another operator. He stated that he had other flight experience in Beech King Air airplanes that included 570 hours in a Beech 99, 215 hours in a King Air 200, and 170 hours in a King Air 300.

The 55-year-old copilot had a commercial pilot certificate with single-engine land, multi-engine land, and airplane instrument ratings. He held a second class medical certificate that was issued on January 8, 2016. He had a total of 1,605 flight hours with 3 hours in the Beech 100. He was hired by Honaker Aviation in March 2016 as a copilot on a Beechjet 400A, and had logged about 200 hours of flight time in the Beechjet 400A since being hired. He did not have any formal training in the Beech 100 and this was his second flight as a copilot on the Beech 100.

The owner of Honaker Aviation reported that the copilot was acting as a "safety" copilot in case the pilot had an incapacitating event, at which time, the copilot would take control of the airplane and land. The copilot was not expected to know the airplane's systems, limitations, or performance characteristics of the airplane.

Aircraft and Owner/Operator Information

Aircraft Make:	Beech	**Registration:**	N411HA
Model/Series:	100	**Aircraft Category:**	Airplane
Year of Manufacture:	1969	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	B-21
Landing Gear Type:	Retractable - Tricycle	**Seats:**	10
Date/Type of Last Inspection:	May 6, 2016 Continuous airworthiness	**Certified Max Gross Wt.:**	10668 lbs
Time Since Last Inspection:		**Engines:**	2 Turbo prop
Airframe Total Time:	12583 Hrs as of last inspection	**Engine Manufacturer:**	P&W CANADA
ELT:	Installed, not activated	**Engine Model/Series:**	PT6A-28
Registered Owner:		**Rated Power:**	1127 Lbs thrust
Operator:	On file	**Operating Certificate(s) Held:**	None

The airplane was a twin-engine Beech 100, serial number B-21, manufactured in 1969, powered by two

680-shaft horsepower P&W PT6A-28 engines. Its maximum gross takeoff weight was 10,600 lbs and had seating for 2 pilots and 8 passengers. The most recent continuous airworthiness maintenance inspection was performed on May 6, 2016, with a total airframe time of 12,583 hours.

The pilot reported that the gross weight of the accident airplane was 11,223 lbs, which was 623 lbs over the maximum gross takeoff weight. The Beech King Air 100 Pilot's Operating Manual's performance charts indicated that the take-off distance at the maximum gross takeoff weight of 10,600 lbs with no flaps was about 2,100 ft. The performance chart for the distance to accelerate to decision speed (100 kts) and stop with no flaps at the maximum gross takeoff weight of 10,600 lbs was about 3,900 ft.

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	LOU,545 ft msl	**Distance from Accident Site:**	9 Nautical Miles
Observation Time:	11:53 Local	**Direction from Accident Site:**	130°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	8 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	210°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.06 inches Hg	**Temperature/Dew Point:**	23°C / 14°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Jeffersonville, IN (JVY)	**Type of Flight Plan Filed:**	IFR
Destination:	Brunswick, GA (SSI)	**Type of Clearance:**	IFR
Departure Time:	12:35 Local	**Type of Airspace:**	

At 1153, the surface weather observation at the Bowman Field Airport (LOU), Louisville, Kentucky, located about 9 nm southeast of JVY, was: wind 210 degrees at 8 kts; visibility 10 miles; sky clear; temperature 23 degrees C; dew point 14 degrees C; altimeter 30.07 inches of mercury.

Airport Information

Airport:	Clark Regional Airport JVY	**Runway Surface Type:**	Asphalt
Airport Elevation:	474 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	18	**IFR Approach:**	None
Runway Length/Width:	5500 ft / 100 ft	**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	2 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	8 None	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	10 None	**Latitude, Longitude:**	38.355278,-85.738052

The airplane's left wing sustained substantial damage to the spar. The left main landing gear and nose gear both collapsed and both engines and propellers were damaged during the accident.

Additional Information

The flight to Brunswick, Georgia, was originally scheduled to be flown in a Learjet 45 that was operated by Jet Access Aviation, a "sister" company of Honaker Aviation. Although the Learjet 45 was on the Part 135 certificate of Jet Access, the flight itself was scheduled as a Part 91 flight since the passengers were guests of the airplane's owner and the flight was not for financial remunerations. However, the Learjet's cockpit windshield needed repair, so the flight was rescheduled to be flown in the Beech 100, which was also partially owned by the owner of the Learjet 45. Although the Beech 100 is a single-piloted airplane, the owner required that a copilot be added to the flight.

Administrative Information

Investigator In Charge (IIC):	Silliman, James
Additional Participating Persons:	Louis Soto; FAA Indianapolis FSDO; Indianapolis, IN
Original Publish Date:	January 18, 2017
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=94314