Aviation Investigation Final Report

Location:	CHESAPEAKE, Virginia	**Accident Number:**	IAD00LA063
Date & Time:	July 18, 2000, 19:15 Local	**Registration:**	N26DS
Aircraft:	Beech BE-55 (T42A)	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	1 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

After applying and achieving full takeoff power, the pilot released the brakes and began the takeoff roll down the runway. The pilot said he perceived a less than 'usual' rate of acceleration, a slight yaw to the right, and decided to abort the takeoff. He reported that he misjudged his altitude, lowered the nose, and struck the nose landing gear on the runway. The nose gear separated, the main gear collapsed, and both propellers struck the runway as the airplane skidded to a stop. Both propellers displayed similar twisting, bending, and chordwise scratching. Examination of the airplane and the right engine revealed no mechanical anomalies. According to the airplane's Operating Handbook, lift off speed for the airplane was 84 knots/97 miles-per-hour. In a written statement and a follow-up conversation, the pilot confirmed that his lift off speed was 87 miles-per-hour. He said that due to the engine conversion performance upgrade, the performance parameters were different from the airplane manufacturer's published numbers. During a telephone conversation, the test pilot for the engine conversion manufacturer stated that the placarded performance figures for the airplane remained the same. He said, '...you just get there a whole lot quicker.' Interpolation of performance charts in the pilot's operating handbook revealed the Accelerate - Stop distance for the airplane that day was 3,500 feet. The departure runway was 4,200 feet long.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the pilot's misjudgment of his altitude/clearance above the runway during the aborted takeoff which resulted in an improper flare for landing. A factor in the accident was the pilot's premature rotation during the takeoff roll.

Findings

Occurrence #1: HARD LANDING
Phase of Operation: LANDING - FLARE/TOUCHDOWN

Findings
1. (F) ROTATION - PREMATURE - PILOT IN COMMAND
2. ABORTED TAKEOFF - PERFORMED - PILOT IN COMMAND
3. (C) ALTITUDE - MISJUDGED - PILOT IN COMMAND
4. (C) FLARE - IMPROPER - PILOT IN COMMAND

Factual Information

On July 18, 2000, at 1915 Eastern Daylight Time, a Beech 55 (T42A), N26DS, was substantially damaged during an aborted takeoff from Runway 23 at the Chesapeake Municipal Airport (CPK), Chesapeake, Virginia. The certificated commercial pilot was not injured. Visual meteorological conditions prevailed and no flight plan was filed for the personal flight conducted under 14 CFR Part 91.

In a written statement, the pilot reported that the purpose of the flight was "...pilot proficiency and to fly an airplane that had been sitting in a hanger for over a month." The pilot said he performed a thorough preflight inspection and performed all before takeoff checks by the checklist. He said the right engine flooded and was difficult to start, but that both engines were operating "completely within normal limits" when he taxied to the runway for takeoff. According to the pilot:

"Took the runway. Stopped on the centerline (to prevent fuel from sloshing) and added power until [I] could no longer hold with brakes and then released brakes. Continued on centerline and at 87 mph eased the nose gear off runway. I noticed that I was not flying and accelerating as usual and at the same time the plane was easing to the right side of the runway. I sensed that something was not right, as I should have been flying at this position of the runway. I looked down the runway and decided I had enough room to abort the takeoff. I closed both throttles and eased the yoke forward. Apparently, I was several feet in the air. When the nose gear impacted the runway [it] sheared off..."

The pilot said the airplane bounced back to an altitude of 15 to 20 feet, landed on the right main gear, struck a runway light, and skidded to a stop. He said he turned the magneto switch and the fuel selector to the 'Off' position before he departed the airplane.

A Federal Aviation Administration operations inspector interviewed the pilot by telephone on the day of the accident. According to the inspector's record of conversation, the pilot described the accident, the damage to the airplane, and stated that he "blew the landing."

A flight instructor and his student witnessed the accident. According to the flight instructor:

"My student and I had just landed and were securing our plane. The Baron was on his takeoff roll, lifted off, and both my student and I heard it making an odd noise almost as if he lost power. He was about 10 feet off the ground [and] the plane nosed over and hit the nose wheel first. It gave right away, then the nose cone hit. The mains struck and buckled as the plane was sliding to the right of the runway... It sounded as if he lost an engine and pulled power to me."

According to the student pilot:

"A multi-engine prop plane crashed on take off at CPK. It rotated and got up about 10 feet when I heard a dramatic decrease in RPM. The nose wheel hit first and buckled. The nose and props hit and the main wheels twisted... I watched the plane cause it did not sound right as it lifted off the ground."

The airplane was examined at the scene by two FAA aviation safety inspectors. In a written statement, the operations inspector stated:

"Both propellers were curled back with repetitive abrasions progressing from the tip towards the hub. Fuel was present in the auxiliary tanks on both sides. Fuel was present in the left main tank, however the quantity could not be determined. The right main tank was empty due to rupture of the tank on impact. The aircraft had sustained substantial damage."

"Inspection of the runway revealed a skid mark beginning approximately 2,700 feet from the departure end of runway 23, continuing for an additional 600 feet, gradually bearing right to the location where the aircraft came to rest on the edge of the runway. Propeller strike marks in the asphalt (7 for each propeller) commenced shortly after the skid marks begin. The aircraft came to rest on a runway light. A large area (10 foot diameter) of dead grass was evidence of a fuel spill."

The pilot reported 5,559 hours of total flight experience, of which 4,300 hours were in multi-engine airplanes. He reported 300 hours of experience in make and model. The pilot said he purchased the airplane on April 15, 2000, and had flown it 27.9 hours since that date. A review of the pilot's logbook revealed that the last flight he logged prior to the accident was in the accident airplane on June 4, 2000, and was 1.2 hours in duration.

The right engine was examined under the supervision of an FAA airworthiness inspector on August 4, 2000. According to the inspector's report:

"Except for the propeller, the engine appeared to be in overall good condition, with no visible external damage. The oil level was approximately 2 [quarts] below the full mark, which is normal. The oil appeared to have been changed recently.

"Next, the propeller was removed, to allow easier access and propeller rotation. The oil screen was then removed, and found clean and free of contamination. Both ignition systems tested OK, with a strong spark to each plug. The spark plugs were undamaged, new, and had a normal appearance.

"The engine turned freely, by hand. All cylinders produced good thumb compression. The fuel distribution manifold was removed, disassembled and inspected, and found containing a clean screen and fresh aviation gasoline, with no signs of contamination. The engine controls were checked for free travel, from stop to stop, with no discrepancies noted.

According to the Beech 55 Pilot's Operating Handbook, lift off speed for the airplane was 84 knots/97 miles-per-hour.

In a follow-up conversation, the pilot confirmed that his lift off speed was 87 miles-per-hour. He said that due to the engine conversion performance upgrade, the performance parameters were different from the airplane manufacturer's published numbers.

During a telephone conversation, the test pilot for the engine conversion manufacturer stated that the placarded performance figures for the airplane remained the same. He said, "...you just get there a whole lot quicker."

Interpolation of the ACCELERATE - STOP DISTANCE Chart in the Beech 55 Pilot's Operating Handbook revealed that the Accelerate - Stop distance for the airplane on the day of the accident was about 3,500 feet.

Runway 23 at the Chesapeake Municipal Airport was 4,200 long and 50 feet wide.

The winds reported at the Norfolk International Airport, 15 miles northeast of CPK were from 040 degrees at 5 knots.

Pilot Information

Certificate:	Commercial	**Age:**	67,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	Helicopter	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 2 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	March 2, 2000
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	5558 hours (Total, all aircraft), 300 hours (Total, this make and model), 5000 hours (Pilot In Command, all aircraft), 27 hours (Last 90 days, all aircraft), 3 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Beech	**Registration:**	N26DS
Model/Series:	BE-55 (T42A) BE-55 (T42	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	TC-1324
Landing Gear Type:	Retractable - Tricycle	**Seats:**	6
Date/Type of Last Inspection:	November 17, 1999 Annual	**Certified Max Gross Wt.:**	5100 lbs
Time Since Last Inspection:	25 Hrs	**Engines:**	2 Reciprocating
Airframe Total Time:	4900 Hrs	**Engine Manufacturer:**	Continental
ELT:	Installed, not activated	**Engine Model/Series:**	IO 550E
Registered Owner:	GARY L. VAN SLYKE	**Rated Power:**	300 Horsepower
Operator:		**Operating Certificate(s) Held:**	None
Operator Does Business As:		**Operator Designator Code:**	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	ORF ,20 ft msl	**Distance from Accident Site:**	15 Nautical Miles
Observation Time:	18:51 Local	**Direction from Accident Site:**	210°
Lowest Cloud Condition:	Scattered / 3000 ft AGL	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	5 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	40°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29 inches Hg	**Temperature/Dew Point:**	27°C / 20°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	(CPK)	**Type of Flight Plan Filed:**	None
Destination:		**Type of Clearance:**	None
Departure Time:	19:15 Local	**Type of Airspace:**	Class G

Airport Information

Airport:	CHESAPEAKE MUNICIPAL CPK	**Runway Surface Type:**	Asphalt
Airport Elevation:	20 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	23	**IFR Approach:**	None
Runway Length/Width:	4200 ft / 50 ft	**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 None	**Latitude, Longitude:**	36.670074,-76.300186(est)

Administrative Information

Investigator In Charge (IIC):	Rayner, Brian
Additional Participating Persons:	MANUEL M CARVALHO; RICHMOND , VA
Original Publish Date:	December 4, 2001
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=49759