



# National Transportation Safety Board Aviation Accident Final Report

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<b>Location:</b>	Middlesboro, KY	<b>Accident Number:</b>	ERA14LA218
<b>Date &amp; Time:</b>	05/02/2014, 1340 EDT	<b>Registration:</b>	N702JS
<b>Aircraft:</b>	BEECH V35B	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Loss of control in flight	<b>Injuries:</b>	1 Serious
<b>Flight Conducted Under:</b>	Part 91: General Aviation - Personal		

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## Analysis

The private pilot departed in the airplane, which he had purchased that morning, with his dog onboard. According to the airplane's previous owner, who witnessed the accident, shortly after takeoff, the pilot announced over the common traffic advisory frequency that the "door popped open" and that he was returning to the airport. The witness further stated that, on final approach, about 30 feet above ground level, the airplane banked left, rolled wings level, flew perpendicular away from the runway, and impacted the ground in a flat attitude. The airplane subsequently became engulfed in flames.

Postaccident examination of the airframe and engine did not reveal any abnormalities that would have precluded normal operation. Thermal damage around the main cabin door precluded determination of the main cabin door locking mechanism's position at the time of impact. It is likely that the pilot did not securely latch the main cabin door before takeoff and that the door partially opened in flight, which resulted in his decision to return to the departure airport. It is also likely that the pilot's dog was not in an animal carrier, which further distracted the pilot. As the pilot slowed the airplane for landing, his attention was likely more focused on the partially opened door and the dog than the landing, which resulted in his failure to maintain airplane control during the landing approach.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's failure to maintain airplane control during the landing approach due to his diverted attention to the partially opened main cabin door and the unsecured dog. Contributing to the accident was the pilot's failure to securely latch the main cabin door before takeoff and to secure his dog.

## Findings

<b>Aircraft</b>	Performance/control parameters - Not attained/maintained (Cause) Passenger/crew doors - Incorrect use/operation (Factor)
<b>Personnel issues</b>	Incomplete action - Pilot (Factor) Aircraft control - Pilot (Cause) Attention - Pilot (Cause)

## Factual Information

### HISTORY OF FLIGHT

On May 2, 2014, about 1340 eastern daylight time, a Beech V35B, N702JS, collided with terrain during a landing attempt at Middlesboro-Bell County Airport (1A6), Middlesboro, Kentucky. The certificated private pilot sustained serious injuries and a dog sustained minor injuries. The airplane sustained substantial impact and thermal damage to both wings and fuselage. Visual meteorological conditions prevailed and no flight plan was filed for the flight. The airplane was registered to a private individual and operated by another private individual under the provisions of Title 14 Code of Federal Regulations Part 91 as a personal flight.

According to an eyewitness, who was also the registered owner of the airplane on file with the Federal Aviation Administration (FAA), the pilot purchased the airplane the morning of the accident and flew with another private pilot prior to the accident flight. Shortly after departure, on the accident flight, the pilot announced on the common traffic advisory frequency that a "door popped open" and that he was returning to land. The eyewitness further stated that on final approach, about 30 feet above ground level, the airplane banked to the left, rolled wings level, flew perpendicular away from the runway, and impacted the ground in a flat attitude. The airplane subsequently became engulfed in flames, and the pilot extricated himself from the airplane with thermal injuries.

### PERSONNEL INFORMATION

The pilot, age 71, held a private pilot certificate for airplane single-engine land, issued September 30, 1995, and a third class medical certificate issued February 21, 2006. The pilot's logbook was not provided to the investigation team at the time of this writing. On the pilot's February 21, 2006, medical application, he reported approximately 2300 total flight hours.

### AIRCRAFT INFORMATION

The four-seat, low-wing airplane, serial number D-9603 was manufactured in 1974. It was powered by a Teledyne Continental Motors IO-550B. Review of the airplane maintenance logbook records showed annual inspection was completed on May 1, 2014, at a recorded tachometer reading of 2250.5 hours, which correlated to an airframe total time of 5363.67 hours. The tachometer was observed at the accident site and indicated 2250.58 hours.

According to an FAA inspector on scene, an FAA Aircraft Registration Form, No. 2120-0042, was located within the wreckage. The form was dated May 2, 2014, and listed the accident pilot as the registered owner. A Bill of Sale was also provided from the previous registered owner dated May 2, 2014, and indicated that the accident pilot had purchased the airplane from the registered owners.

### METEOROLOGICAL INFORMATION

The 1335 recorded weather observation at 1A6, included wind from 270 degrees at 4 knots, 10 miles visibility, broken clouds at 5,500 feet above ground level, temperature 18 degrees C, dew point 4 degrees C; barometric altimeter 29.93 inches of mercury

### AIRPORT INFORMATION

The airport is a publically owned airport and at the time of the accident did not have an operating control tower. The airport was equipped with one runway designated as runway

10/28. The runway was 3,631-foot-long by 75-foot-wide runway and was listed as "in good condition." The airport was 1,154 feet above mean sea level.

#### WRECKAGE AND IMPACT INFORMATION

On-site examination of the wreckage by an FAA inspector and a representative from the airplane manufacturer revealed that the airplane impacted the paved portion of the displaced threshold of the intended landing runway with the left wing fiberglass fuel tip tank. The debris path was about 250 feet in length, from the initial impact point to the main wreckage, began about 90 feet prior to the runway displaced threshold, and was on a course of about 071 degrees. Along the debris path, 5 distinct ground scars were located in the ground, similar in appearance as propeller blade marks. The ground scars varied in distance between each other and were progressively increasing in distance. The distances from the first ground scar to the last ground scar was approximately 48 inches. Further examination revealed flight control continuity to all flight control surfaces and the ruddervator trim actuator extension was measured and found to be about one-half inch, which correlated to approximately 20 degree nose up trim position. Both wing flap actuators were measured and the measurements correlated to about a 30 degree flap position. Both main fuel tanks contained approximately 40 gallons of blue fluid similar in color and smell as 100 LL aviation fuel and both fiberglass wingtip tanks were breeched. The fuel selector valve was found in the right wing main fuel tank detent. The fuel system was free of debris and no abnormalities with the system were noted. All three landing gear assemblies, including the actuators, were found in the extended position and the landing gear selector handle, located in the cockpit, was found in the "DOWN" position. The cockpit and forward portion of the cabin, including the main cabin door, exhibited thermal damage consistent with postimpact fire. The thermal damage precluded examination of the door lock mechanism.

No evidence existed in the wreckage that indicated there was any animal carrier to secure the dog. However, the investigation could not conclusively determine if the dog was in the front seat or some other location in the airplane at the time of the accident.

#### TEST AND RESEARCH

A postaccident examination of the engine, revealed thermal damage to the rear accessories as well as cables and hoses. The engine was mounted in an engine test cell, started on the first attempt, and operated at various power settings required of a newly manufactured engine. During the engine exam and test run, no anomalies were noted that would have precluded normal operation. For further information in regards to the engine examination please reference the "Engine Examination Report" located in the docket for this accident case.

#### ADDITIONAL INFORMATION

The Pilot Operating Manual (POM) "BEFORE TAKE-OFF" checklist in Section II, "Normal Procedures" outlines the before takeoff procedures. The procedure states in part "....11. Doors and Windows – Secure..."

In addition Section III "Emergency Procedures" states in part "Unlatched Door in Flight – If the cabin door is not locked it may come unlatched in flight. This may occur during or just after take-off. The door will trail in a position approximately 3 inches open but the flight characteristics of the airplane will not be affected. Return to the field in a normal manner. If practicable, during the landing flare-out have a passenger hold the door to prevent it from swinging open."

According to the Hawker Beechcraft Corporation "Bonanza 35 Series Shop Manual" Section 7C, "Cabin and Baggage Compartment" states in part "...14 Windows and Doors -...Inspect doors for security of attachment. Check latching mechanism for proper engagement and ease of operation. Check that the rotation of the interior door handle without depressing the handle lock release button does not unlatch the door..."

## History of Flight

Takeoff	Miscellaneous/other
Approach-VFR pattern final	Loss of control in flight (Defining event) Collision with terr/obj (non-CFIT)
Post-impact	Fire/smoke (post-impact)

## Pilot Information

Certificate:	Private	Age:	71
Airplane Rating(s):	Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 3 With Waivers/Limitations	Last Medical Exam:	02/21/2006
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:	(Estimated) 2300 hours (Total, all aircraft)		

## Aircraft and Owner/Operator Information

Aircraft Manufacturer:	BEECH	Registration:	N702JS
Model/Series:	V35B	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	D-9603
Landing Gear Type:	Retractable - Tricycle	Seats:	6
Date/Type of Last Inspection:	05/01/2014, Annual	Certified Max Gross Wt.:	3400 lbs
Time Since Last Inspection:	0 Hours	Engines:	1 Reciprocating
Airframe Total Time:	5364 Hours	Engine Manufacturer:	Tyedyne Continental Motors
ELT:	Not installed	Engine Model/Series:	IO-550-B(5)
Registered Owner:	On file	Rated Power:	300 hp
Operator:	On file	Air Carrier Operating Certificate:	None

## Meteorological Information and Flight Plan

Observation Facility, Elevation:	K1A6, 1154 ft msl	Observation Time:	1335 EDT
Distance from Accident Site:	0 Nautical Miles	Condition of Light:	Day
Direction from Accident Site:	10°	Conditions at Accident Site:	Visual Conditions
Lowest Cloud Condition:	Thin Broken / 5500 ft agl	Temperature/Dew Point:	18° C / 4° C
Lowest Ceiling:	Broken / 5500 ft agl	Visibility	10 Miles
Wind Speed/Gusts, Direction:	4 knots, 270°	Visibility (RVR):	
Altimeter Setting:	29.93 inches Hg	Visibility (RVV):	
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Middlesboro, KY (1A6)	Type of Flight Plan Filed:	None
Destination:		Type of Clearance:	None
Departure Time:	1340 EDT	Type of Airspace:	

## Airport Information

Airport:	MIDDLESBORO-BELL COUNTY (1A6)	Runway Surface Type:	Asphalt
Airport Elevation:	1154 ft	Runway Surface Condition:	Dry
Runway Used:	10	IFR Approach:	None
Runway Length/Width:	3631 ft / 75 ft	VFR Approach/Landing:	Full Stop; Precautionary Landing; Traffic Pattern

## Wreckage and Impact Information

Crew Injuries:	1 Serious	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	On-Ground
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Serious		

## Administrative Information

Investigator In Charge (IIC):	Shawn Etcher	Adopted Date:	12/15/2014
Additional Participating Persons:	Shannon D Bengeyfield; FAA/FSDO; Louisville, KY Ernest Hall; Textron Aviation; Wichita, KS Mike Council; CMI; Mobile, AL		
Publish Date:	12/15/2014		
Investigation Docket:	<a href="http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=89155">http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=89155</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.