



Aviation Investigation Final Report

Location:	Moscow, Tennessee	Accident Number:	ERA09LA147
Date & Time:	January 31, 2009, 15:25 Local	Registration:	N31254
Aircraft:	Bellanca 8KCAB	Aircraft Damage:	Substantial
Defining Event:	Loss of control in flight	Injuries:	1 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot departed solo from his home airport for a local, personal flight. About 13 minutes later, an eyewitness observed the airplane “vertical going up and nosed over to the right and went straight down...” He heard a “light thud” and realized the airplane had crashed. He reported that the engine “seemed fine, no missing, running strong.” The witness estimated that the pilot was maneuvering at less than 1,000 feet above the ground. The wreckage was found in a nose-low attitude at the edge of a small lake. Examination of the wreckage did not reveal evidence of a mechanical malfunction or failure. Propeller signatures were indicative of engine power at impact. The pilot, who was also a captain for a major air cargo operator, had recently acquired the airplane and had logged approximately 13 hours in the aerobatic airplane.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's initiation of a low altitude maneuver followed by an uncontrolled descent into terrain.

Findings

Not determined	(general) - Unknown/Not determined
-----------------------	------------------------------------

Factual Information

History of Flight

Maneuvering	Loss of control in flight (Defining event)
Uncontrolled descent	Collision with terr/obj (non-CFIT)

On January 31, 2009, about 1525 central standard time, a Bellanca 8KCAB, N31254, was substantially damaged after an in-flight loss of control while maneuvering near Moscow, Tennessee. The private pilot was killed. The airplane was owned and operated by the pilot. The local, personal flight was conducted under 14 Code of Federal Regulations (CFR) Part 91. Day, visual meteorological conditions prevailed, and no flight plan was filed. The flight originated at Olive Branch Airport (OLV), Olive Branch, Mississippi about 1513.

A witness was outside, washing his car at the time of the accident. He reported that the weather was "sunny and light wind." He observed the airplane "vertical going up and nosed over to the right and went straight down..." He then heard a "light thud" and realized the airplane had crashed. He also noted that the engine "seemed fine, no missing, running strong." When asked about the altitude of the airplane, he estimated that the airplane was operating at "less than 1,000 feet." Prior to the airplane "pulling straight up vertical," the airplane appeared to be just above a tree line adjacent to his property.

Inspectors from the Federal Aviation Administration (FAA) inspected the airplane wreckage at the accident site. The wreckage was located in a rural area about 9 miles south of Somerville, Tennessee. They reported that there was a debris field approximately 64 feet in length. The airplane came to rest at the edge of a pond in a nose low attitude. The wings, fuselage, and empennage were fragmented. There were broken tree limbs adjacent to the accident site. A section of the wing spar and wing skin remained lodged in the top of a pine tree. The propeller showed evidence of s-bending, chordwise scratching, and blade twisting. The engine could not be rotated by hand due to impact damage. Flight control continuity was established from all primary flight control surfaces to the cockpit. Both fuel tanks were breached and there was spilled fuel within the debris field.

The pilot held a private pilot certificate with privileges for airplane single engine land and glider. He also held airline transport pilot and flight engineer certificates. He was a Boeing 757 captain for Federal Express. He possessed a first class medical certificate dated December 15, 2008, with a restriction to possess glasses for near and intermediate vision.

According to the FAA, the pilot recently acquired the airplane and had logged approximately 13 hours in the airplane. He reported 10,050 hours total time on his latest FAA medical application. The pilot's logbook was not located after the accident. Friends and acquaintances of the pilot reported that they were not aware of any aerobatic instruction received by the pilot.

A review of the aircraft and engine logbooks revealed the airplane received an annual inspection on September 15, 2008. At the time of the accident, the airplane had accumulated approximately 13 hours since the annual inspection.

The 1550 weather observation at OLV reported the following: winds from 200 degrees at 9 knots, 10 statute miles visibility, sky clear, temperature 13 degrees Celsius (C), dew point 1 degree C, and altimeter setting 30.13 inches of mercury.

The physician who performed the pilot's latest FAA first class medical examination reported that there were no significant medical findings as a result of the examination. He considered the pilot to be in good health and was unaware of any medical conditions that might have contributed to the accident.

A postmortem examination of the pilot was performed by the Office of the Shelby County Medical Examiner, Memphis, Tennessee. The cause of death was listed as, "...blunt force injuries. The manner of death is accident."

Forensic toxicology was performed on specimens of the pilot by the FAA Bioaeronautical Sciences Research Laboratory (CAMI), Oklahoma City, Oklahoma. The CAMI toxicology report was negative for carbon monoxide, cyanide, ethanol, and drugs.

14 CFR Part 91, section 303, defines aerobatic flight as, "an intentional maneuver involving an abrupt change in an aircraft's attitude, an abnormal attitude, or abnormal acceleration, not necessary for normal flight." Section 303 also states that no person may operate an aircraft in aerobatic flight below an altitude of 1,500 feet above the surface.

Pilot Information

Certificate:	Airline transport; Flight engineer; Private	Age:	51, Male
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	Glider	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	Yes
Medical Certification:	Class 1 With waivers/limitations	Last FAA Medical Exam:	December 15, 2008
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	January 9, 2009
Flight Time:	(Estimated) 10050 hours (Total, all aircraft), 13 hours (Total, this make and model)		

Aircraft and Owner/Operator Information

Aircraft Make:	Bellanca	Registration:	N31254
Model/Series:	8KCAB	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Aerobatic; Normal	Serial Number:	4872
Landing Gear Type:	Tailwheel	Seats:	2
Date/Type of Last Inspection:	September 15, 2008 Annual	Certified Max Gross Wt.:	1800 lbs
Time Since Last Inspection:	13 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	1213 Hrs at time of accident	Engine Manufacturer:	LYCOMING
ELT:	Installed	Engine Model/Series:	IO-320-E1A
Registered Owner:	Ray K. Davis	Rated Power:	150 Horsepower
Operator:	Ray K. Davis	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	OLV,402 ft msl	Distance from Accident Site:	25 Nautical Miles
Observation Time:	14:50 Local	Direction from Accident Site:	210°
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	9 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	240°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.15 inches Hg	Temperature/Dew Point:	13°C / 1°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Olive Branch, MS (OLV)	Type of Flight Plan Filed:	None
Destination:	Olive Branch, MS (OLV)	Type of Clearance:	None
Departure Time:	15:13 Local	Type of Airspace:	

Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Substantial
Passenger Injuries:		Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Fatal	Latitude, Longitude:	35.099998,-89.199996(est)

Administrative Information

Investigator In Charge (IIC):	Hicks, Ralph
Additional Participating Persons:	Jeff Shackelford; FAA/FSDO; Memphis, TN Tom DeHart; FAA/FSDO; Memphis, TN Speed McLean; FAA/FSDO; Memphis, TN Angela Langston; FAA/FSDO; Memphis, TN Steve Messler; FAA/FSDO; Memphis, TN Danny Wuo; FAA/FSDO; Memphis, TN
Original Publish Date:	August 13, 2009
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=73298

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, “accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person” (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available [here](#).