



National Transportation Safety Board Aviation Accident Final Report

Location:	MANZANOLA, CO	Accident Number:	FTW97FA002
Date & Time:	10/02/1996, 1615 MDT	Registration:	N145DB
Aircraft:	Bell EAA BIPLANE P	Aircraft Damage:	Destroyed
Defining Event:		Injuries:	1 Fatal
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

Witnesses said the biplane flew over the farm airstrip at an estimated altitude of 300 to 400 feet. One witness stated that the pilot started 'what appeared to be an aileron roll, but stopped halfway and peeled off to the left in a shallow dive but didn't have enough altitude to pull out.' Another witness said that the pilot 'began rolling the aircraft right wing down about 3/4 of a roll then the front of the plane dropped' and disappeared from his view. The biplane struck the ground about 350 feet south of runway 27 on a westerly heading. Ground scars from impact were found over a 150 foot area. An investigation disclosed no evidence of a preimpact malfunction or failure of the airframe, flight controls, engine, or propeller. The 739-hour pilot had recently graduated from an aerial application school and was employed as a first season aerial applicator. He had previously flown the biplane three times and had an estimated 3.0 hours of flight time in this make/model of aircraft.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: failure of the pilot to maintain sufficient altitude/clearance above the terrain, while performing a low altitude maneuver. A factor relating to the accident was the pilot's lack of familiarity with this make and model of aircraft.

Findings

Occurrence #1: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: MANEUVERING

Findings

1. LOW PASS - PERFORMED - PILOT IN COMMAND
2. MANEUVER - INITIATED - PILOT IN COMMAND
3. (C) ALTITUDE/CLEARANCE - NOT MAINTAINED - PILOT IN COMMAND
4. (F) LACK OF TOTAL EXPERIENCE IN TYPE OF AIRCRAFT - PILOT IN COMMAND

Factual Information

HISTORY OF FLIGHT

On October 2, 1996, approximately 1615 mountain daylight time, a Darol EAA Biplane P, N145DB, was destroyed when it impacted terrain while maneuvering two miles west of Manzanola, Colorado. The commercial pilot was fatally injured. Visual meteorological conditions prevailed, and no flight plan was filed for the personal flight conducted under Title 14 CFR Part 91. The flight originated at Manzanola, Colorado, approximately 15 minutes before the accident.

There were three known witnesses to the accident. Witness no. 1 said the airplane flew east over his airstrip at an estimated altitude of 300 to 400 feet agl (above ground level). He said the pilot started "what appeared to be an aileron roll, but stopped halfway and peeled off to the left in a shallow dive but didn't have enough altitude to pull out." Witness no. 2 said the pilot "began rolling the aircraft right wing down about 3/4 of a roll, then the front of the plane dropped and...the aircraft (dove) belly side facing me (and) disappear behind a slope to our west." Witness no. 3 could not add substantively to the other witness' accounts.

PERSONNEL INFORMATION

According to the pilot's logbook, 725.0 hours of his 739.1 total flight hours were in single engine airplanes, and 494.8 hours were in conventional landing gear airplanes. He had 384.6 total aerial application hours. He was employed by C&L Flying Service, and aerial applicator, of Rocky Ford, Colorado, on March 28, 1996. According to a C&L sokesman, this was the pilot's first spraying season, having recently graduated from Sam Riggs Aerial Applicator School in Claremore, Oklahoma.

Further examination of his logbook disclosed the pilot first flew N145DB on July 6, 1996, at Raton, New Mexico. Flight time was 30 minutes. The airplane had been recently purchased, and he was to ferry it from Raton to its new owner in Manzanola. He made the following entry: "Went to ferry small biplane. Very squirrely. Engine ran rough. Late start, will go back." According to the pilot's father, his son later told him he did not want to fly a strange airplane into a strange airport as darkness approached.

The second flight occurred on July 20, when the pilot delivered the airplane at Manzanola via Trinidad, Colorado. He made the following entry: "Finally retrieved the plane, not enough power to be flying over mountain passes. Big pucker factor. I'm not impressed with its handling. Very tired, work, landed at Frank's. Told him to sell his new airplane." Total flight time was 2.0 hours.

The third flight was on October 1 at Manzanola. The pilot made the following entry: "Test flight. Went very well (more power than first try)." Total flight time was 36 minutes. His fourth flight in the airplane was on the following afternoon and resulted in the accident (see attachments).

AIRCRAFT INFORMATION

Examination of the airplane maintenance records disclosed the airplane was built by James D. Bell of Benton, Arkansas, and construction was completed on September 30, 1966. The two most recent conditional inspections of the airplane were performed on July 28, 1994, and May 1, 1996. On those dates, the airplane had accrued 33.95 and 34.32 hours time in service,

respectively, or 0.37 hours in two years. Between May 1, 1996, the date of the last conditional inspection, and October 2, 1996, the day of the accident, the airplane had accumulated 7.21 hours time in service.

WRECKAGE AND IMPACT INFORMATION

The wreckage was located approximately 350 feet south of the runway, and about 2,200 feet west of the threshold of runway 27. A ground scar, approximately 150 feet in length and aligned on a magnetic heading of 280 degrees, terminated at the airplane. There were three prominent ground depressions along the scar. The first depression was at the beginning of the scar and was 17 feet long and 13 feet wide. Leading into this depression were two distinct marks 67 inches apart. According to the airplane blueprints, the main landing gear has a span of 67.5 inches. Just beyond these two marks, and still within the depression, were two slashes in the earth, roughly perpendicular to the ground scar. They measured 17 inches apart.

The second depression was 95 feet, 4 inches past the first depression, and was 10 feet long and 5 feet, 3 inches wide. The third depression was 52 feet, 4 inches beyond the second depression. The airplane was next to this third depression.

The engine was separated from the airframe, and the carburetor and propeller were separated from the engine. These components were found in the second ground depression. The propeller spinner was crashed aft and to one side, exposing four crankshaft attachment bolts. One propeller blade was embedded in the earth. The other blade had an S-curl and the tip was bent aft. The cambered surface bore 75 degree scratch marks.

Both wings remained attached to the upright airframe that rested atop the inverted empennage. Flight control continuity was established throughout.

MEDICAL AND PATHOLOGICAL INFORMATION

An autopsy (Report #96A-331) was performed by Dr. David L. Bowerman of the El Paso County Coroner's Office at the request of the Otero County Coroner. Toxicological tests were negative for alcohol and drugs of abuse.

Toxicological protocol performed by FAA's Civil Aeromedical Institute in Oklahoma City, Oklahoma, similarly found no evidence of drugs or alcohol.

ADDITIONAL INFORMATION

The wreckage was released to the owner on October 3, 1996. The Federal Aviation Administration was the only party to the investigation.

Pilot Information

Certificate:	Commercial	Age:	29, Male
Airplane Rating(s):	Single-engine Land	Seat Occupied:	Front
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	Yes
Medical Certification:	Class 2 Valid Medical--no waivers/lim.	Last FAA Medical Exam:	12/15/1995
Occupational Pilot:		Last Flight Review or Equivalent:	
Flight Time:	739 hours (Total, all aircraft), 3 hours (Total, this make and model), 663 hours (Pilot In Command, all aircraft), 215 hours (Last 90 days, all aircraft), 24 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Bell	Registration:	N145DB
Model/Series:	EAA BIPLANE P EAA BIPLAN	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	Yes
Airworthiness Certificate:	Experimental	Serial Number:	DB-1
Landing Gear Type:	Tailwheel	Seats:	1
Date/Type of Last Inspection:	05/01/1996, Annual	Certified Max Gross Wt.:	1161 lbs
Time Since Last Inspection:	7 Hours	Engines:	1 Reciprocating
Airframe Total Time:	42 Hours	Engine Manufacturer:	Lycoming
ELT:	Not installed	Engine Model/Series:	O-290-11
Registered Owner:	FRANK GHILARDUCCI	Rated Power:	125 hp
Operator:	FRANK GHILARDUCCI	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	LHX, 4238 ft msl	Distance from Accident Site:	24 Nautical Miles
Observation Time:	1553 MDT	Direction from Accident Site:	94°
Lowest Cloud Condition:	Clear / 0 ft agl	Visibility	10 Miles
Lowest Ceiling:	None / 0 ft agl	Visibility (RVR):	0 ft
Wind Speed/Gusts:	7 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	120°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30 inches Hg	Temperature/Dew Point:	16° C / 4° C
Precipitation and Obscuration:			
Departure Point:	(NONE)	Type of Flight Plan Filed:	None
Destination:		Type of Clearance:	None
Departure Time:	1600 MDT	Type of Airspace:	Class G

Airport Information

Airport:	GHILARDUCCI FARM (NONE)	Runway Surface Type:	Dirt
Airport Elevation:	4300 ft	Runway Surface Condition:	Dry
Runway Used:	27	IFR Approach:	None
Runway Length/Width:	3300 ft / 50 ft	VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Destroyed
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Fatal	Latitude, Longitude:	

Administrative Information

Investigator In Charge (IIC):	ARNOLD W SCOTT	Report Date:	02/05/1998
Additional Participating Persons:	JOHN B MIDDLETON; DENVER, CO		
Publish Date:			
Investigation Docket:	NTSB accident and incident dockets serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at pubinq@ntsb.gov , or at 800-877-6799. Dockets released after this date are available at http://dms.nts.gov/pubdms/ .		

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