



Aviation Investigation Final Report

Location:	MOUND HOUSE, Nevada	Accident Number:	LAX96FA290
Date & Time:	July 25, 1996, 09:06 Local	Registration:	N57438
Aircraft:	Bellanca 8KCAB	Aircraft Damage:	Destroyed
Defining Event:		Injuries:	1 Fatal, 1 Serious
Flight Conducted Under:	Part 91: General aviation - Instructional		

Analysis

The instructor pilot (CFI) reduced power to simulate an emergency landing and instructed the student to simulate a forced landing approach to a dirt road. The CFI said that he allowed the student to get too low, and when he assumed the controls, the airplane struck the ground and bounced. Ground witnesses said that when the airplane struck the ground, the engine power increased, and the airplane entered into a high angle of attack and a steep right banking attitude. The airplane struck the top of a tree about 1/4 mile from the initial touchdown point, then it bounced twice and collided with a concrete barrier. The airplane flipped over the barrier and erupted into flames. Wreckage examination disclosed no evidence of any preimpact malfunctions or failures.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the flight instructor's improper in-flight planning/decision by allowing the student pilot to get too low during a simulated emergency landing before initiating a go-around.

Findings

Occurrence #1: IN FLIGHT COLLISION WITH OBJECT
Phase of Operation: CLIMB

Findings

1. EMERGENCY PROCEDURE - SIMULATED - PILOT IN COMMAND(CFI)

2. (C) IN-FLIGHT PLANNING/DECISION - IMPROPER - PILOT IN COMMAND(CFI)
3. (C) GO-AROUND - DELAYED - PILOT IN COMMAND(CFI)
4. OBJECT - TREE(S)
5. (C) ALTITUDE/CLEARANCE - NOT MAINTAINED - PILOT IN COMMAND(CFI)
6. OBJECT - OTHER

Factual Information

History of Flight

On July 25, 1996, at 0906 hours Pacific daylight time, a Bellanca 8KCAB, N57438, collided with a tree and crashed in the rear yard of Canyon Construction Company, Mound House, Nevada. The pilots were conducting a local visual flight rules instructional flight. The airplane, registered to the pilot's son, was destroyed by the impact forces and resulting postimpact fire. The certificated airline transport pilot/flight instructor sustained serious injuries and the dual student sustained fatal injuries. Visual meteorological conditions prevailed. The flight originated at Carson City Airport, Carson City, Nevada, at 0850.

The airport refueler reported that he fueled the airplane with 16 gallons of fuel (8 gallons in each wing tank) before the flight departed. The refueler said that both pilots were conducting an extensive preflight inspection while he was fueling the airplane. He also said that both tanks were less than full after he completed the fueling.

Safety Board investigators interviewed several ground witnesses. They reported they were standing in their company's yard (located about 3/4 mile south/southeast of the crash site) and observed the airplane fly over their building in a westerly direction. The airplane was between 30 to 40 feet above the building and the engine was not producing power. The airplane turned to the north and lined up with a dirt road and then suddenly nosed down and struck the road. The engine power suddenly increased and the airplane entered into a 30-degree nose-up attitude and banked sharply (about 90 degrees) to the right. The engine sounded normal and there was no sputtering or cutting out sounds. The airplane disappeared from their view momentarily and then they saw the airplane's tail raise and the airplane flipped over and burst into flames.

Another ground witness reported that he was driving a skip loader about 1 mile west of the crash site when he saw a dust cloud. He then observed the airplane bounce twice and then erupt in a ball of flames. The witnesses did not hear any engine sounds and said that he was wearing ear plugs.

The pilot reported in a telephone interview conducted on July 26, 1996, at 1015, that he was giving his daughter a flight lesson. He said that before the accident they were performing a simulated emergency forced landing to a dirt road. He said that he allowed his daughter to get "too low" and that he attempted to recover from the maneuver, but without success. The airplane struck the ground and he immediately applied power. The engine responded normally, but the airplane's rate of climb was insufficient to clear the tree. He also said that the airplane did not experience any preimpact malfunctions or failures.

Crew Information

The pilot-in-command (PIC) holds an airline transport pilot certificate with an airplane multiengine land and several large airplane type ratings; the certificate is endorsed for commercial privileges in airplane single engine land and sea ratings. He also holds a certified flight instructor certificate with ratings for airplane single engine, multiengine, and instruments, and a second-class medical certificate. The medical certificate was issued on July 10, 1996, and contains a "must wear hearing aid" limitation endorsement.

Safety Board investigators did not obtain the pilot's flight hours logbook. The flight hours reflected on page 3 of this report were obtained from the FAA. The pilot noted on his last medical application form that he had accrued 24,900 hours. The PIC's son, the owner of the airplane, said that his father told him that he renewed his flight instructor's certificate about 2 weeks before the accident. The FAA records, however, do not show that the PIC received a new flight instructor's certificate. A renewed certificate is not reflected in the records for about 120 days.

The dual student held a student pilot/third-class medical certificate. The student pilot received the certificate on July 10, 1996. The medical certificate contains a "must wear corrective lenses" limitation endorsement.

Safety Board investigators did not obtain the student pilot's logbook. The dual student noted on her third-class medical application form that she had accrued 10 flight hours. A Lyon County Sheriff's Deputy told Safety Board investigators that airport personnel told him that the student pilot soloed the airplane about a week before the accident. The pilot's son confirmed this statement.

Aircraft Information

The airplane owner said that the airplane's maintenance logbooks were in the airplane. Safety Board investigators found logbook remnants at the accident site. According to the owner, the airplane received its last annual inspection sometime in August 1995. The inspection was accomplished by Scottsdale Flyer's, Scottsdale, Arizona.

Scottsdale Flyer's owner provided the Safety Board with all of the maintenance records he had in connection with the maintenance the company performed on the airplane. The records show that the last annual/100-hour inspection was performed on August 22, 1995. At the time of the inspection, the engine and the airframe accrued 1,076.3 hours.

The accident site elevation is about 5,000 feet mean sea level. Safety Board investigators calculated the density altitude to be about 7,500 feet.

According to a New American Champion Company representative, the accident airplane make and model average empty weight is about 1,150 pounds. The maximum allowable gross

weight is 1,800 pounds. Safety Board investigators estimated the takeoff weight to be about 1,686 pounds. The pilot and student weights were obtained from their FAA medical records and the fuel quantity was estimated at 20 gallons (1/2 full).

Meteorological Information

There is no surface weather reporting facility at the accident site. The weather data reflected on page 3 of this report were obtained from the pilot. According to the ground witnesses, the skies were clear with unrestricted visibility, the surface winds were from the west at 5 knots, and the surface temperature was about 75 degrees Fahrenheit.

Fire

Personnel from the Canyon Construction Company extinguished the fire before the Lyon County Fire Department personnel arrived.

Wreckage and Impact Information

The airplane came to rest, inverted, in the rear (western section) of a construction yard. The fuselage was found resting on its right side against a "skimmer" (a lean-to type shed). The ground roll path area is level, but the southern end slopes downward about 10 degrees. The northern end of the ground path is separated from the rear of the construction yard with several concrete barrier sections weighing about 2 tons each. The main wreckage area is about 4 feet lower than the airplane's ground path area.

Safety Board investigators found the forward section of the right main wheel fairing next to the dirt road. The airplane's propeller initially struck a pinon tree about 528 feet south/southwest of the main wreckage site. Scattered tree branches were found between 20 to 25 feet north of the tree. The ground scars and a witness observation show that after striking the tree, the airplane bounced twice on the ground and then collided with a concrete barrier section. A concrete barrier section moved about 2 feet and contained the airplane's right wheel imprint on its southern facing side. After colliding with the barrier, the airplane flipped over and came to rest in the construction yard.

Both landing gear wheel pants were found along the airplane's ground path near their associated wheel ground imprints. Both main landing gears were found next to the southern side of the concrete barriers. Examination of the landing gears attach bolts fractured surfaces displayed characteristics of a tensile overload separation.

The entire airplane was incinerated by the postcrash fire. All the airplane's major components and flight control surfaces were found at the main wreckage area. Safety Board investigators established continuity of the flight control surfaces to the cabin/cockpit area.

Both wings separated from their respective attach points, but were found next to the fuselage.

The left wing fuel tank was destroyed by the fire; the right wing tank, however, contained about a gallon of blue colored (100 octane) fuel. The fuel was free of contaminants.

The instrument panel and its associated instruments were destroyed.

The engine sustained extensive postimpact fire damage. The oil pan was destroyed. Continuity of the engine gear and valve train assembly was established. All the cylinders except the No. 2 cylinder developed thumb compression when the crankshaft was rotated. The forward section of the No. 2 cylinder contained a 2-inch diameter hole.

The engine pressure relief valve was intact.

Both magnetos were fire damaged and could not be functionally tested. The Nos. 1 and 3 upper spark plugs were oil soaked. The Nos. 2 and 4 upper spark plugs displayed normal operating signatures. The No. 4 spark plug center electrode displayed prominent ovaling signatures.

The fuel control servo was destroyed. The mixture attach arm was found seized near the full rich position. The fuel flow divider diaphragm was intact. The fuel injector lines were unobstructed.

Medical & Pathological Information

Toxicology examinations were not conducted on the pilot, nor were they requested.

Additional Information

The airplane was released to the registered owner on August 1, 1996. The airframe and engine were at Dave Monti Aircraft Rebuild, Minden Airport, Minden, Nevada, when they were released.

Pilot Information

Certificate:	Airline transport; Flight instructor	Age:	66, Male
Airplane Rating(s):	Single-engine land; Single-engine sea	Seat Occupied:	Rear
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	Airplane multi-engine; Airplane single-engine; Instrument airplane	Toxicology Performed:	No
Medical Certification:	Class 2 Valid Medical-w/ waivers/lim	Last FAA Medical Exam:	July 10, 1996
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:	24900 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Bellanca	Registration:	N57438
Model/Series:	8KCAB 8KCAB	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Aerobatic; Normal; Utility	Serial Number:	89-73
Landing Gear Type:	Tailwheel	Seats:	2
Date/Type of Last Inspection:	August 9, 1995 Annual	Certified Max Gross Wt.:	1800 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:		Engine Manufacturer:	Lycoming
ELT:	Installed, not activated	Engine Model/Series:	AEIO-320-E1A
Registered Owner:	BRADLEY B. BAILEY	Rated Power:	150 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:		Distance from Accident Site:	
Observation Time:		Direction from Accident Site:	
Lowest Cloud Condition:	Clear	Visibility	50 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	5 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	270°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:		Temperature/Dew Point:	24°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	CARSON CITY , NV (004)	Type of Flight Plan Filed:	None
Destination:		Type of Clearance:	None
Departure Time:	08:50 Local	Type of Airspace:	Class G

Airport Information

Airport:		Runway Surface Type:	
Airport Elevation:		Runway Surface Condition:	Dry
Runway Used:	0	IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	Simulated forced landing; Touch and go

Wreckage and Impact Information

Crew Injuries:	1 Fatal, 1 Serious	Aircraft Damage:	Destroyed
Passenger Injuries:		Aircraft Fire:	On-ground
Ground Injuries:	N/A	Aircraft Explosion:	On-ground
Total Injuries:	1 Fatal, 1 Serious	Latitude, Longitude:	39.140914,-119.710273(est)

Administrative Information

Investigator In Charge (IIC):	Llorente, A.
Additional Participating Persons:	FRED B TWIGGE; RENO , NV
Original Publish Date:	December 23, 1996
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=29287

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