Aviation Investigation Final Report

Location:	Sedgwick, Maine	**Accident Number:**	NYC01FA201
Date & Time:	August 5, 2001, 15:30 Local	**Registration:**	N80195
Aircraft:	Bellanca 7GCBC	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	2 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

Several witnesses observed the Champion 7GCBC flying low and maneuvering. The witnesses agreed that while maneuvering, the nose of the airplane dropped and the airplane descended into a wooded area. Examination of the airplane revealed the tachometer was at 2,500 rpm. Several pieces of wood with smooth angular cuts were found along the debris trail that led to the at the accident site. The largest piece of cut wood was about 5 inches across. Flight control continuity was confirmed; however, the intensity of the fire melted many metal components, and the some items could not be checked. Based upon an estimated weight and balance, the airplane could carry 11 gallons of gasoline and remain under the maximum allowable takeoff weight, or with full fuel it would be 161 pounds over its maximum allowable takeoff weight. The actual amount of fuel onboard at takeoff and at the time of the accident was not determined.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The failure of the pilot to maintain control while maneuvering.

Findings

Occurrence #1: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: MANEUVERING

Findings

1. (C) AIRCRAFT CONTROL - NOT MAINTAINED - PILOT IN COMMAND

Occurrence #2: IN FLIGHT COLLISION WITH OBJECT
Phase of Operation: DESCENT - UNCONTROLLED

Findings
2. OBJECT - TREE(S)

Factual Information

HISTORY OF FLIGHT

On August 5, 2001, about 1530 eastern daylight time, a Bellanca 7GCBC, N80195, was destroyed when it collided with trees and burned, while maneuvering near Sedgwick, Maine. The certificated private pilot and passenger were fatally injured. Visual meteorological conditions prevailed for the local flight. No flight plan had been filed for the personal flight conducted under 14 CFR Part 91.

The pilot departed from Blue Hill Airport (07B), about 1500. Several witnesses reported seeing a low flying airplane maneuvering in the area prior to the accident.

One witness reported:

"I was out chopping wood. I saw the airplane 50 feet above trees. My house is 1-2 miles from crash site. I saw him make a sharp climb and then I didn't hear the engine. The plane then dived at a sharp angle. I then lost sight of the aircraft behind trees. 10-15 seconds later I saw smoke going straight out. Weather was clear."

Another witness who was at the Country View Restaurant reported:

"I heard a plane approaching. If you were standing in front of the restaurant with your back to the restaurant, the airplane flew over my head and away from me at the ten o'clock position. I estimated it to be at about 400 feet AGL. The plane passed over again about 5 minutes later. It was flying over and parallel to the road in a northerly direction. It was at the same altitude. Two minutes later, it came over the restaurant again and flew directly away from me. The aircraft did not seem unusually low, and was in a slight descent with the wing level. I thought I heard the engine sputter. I lost sight of the aircraft and someone said it crashed...."

The owner of the Country View Restaurant reported:

Watching A/C do aerial stunts. He was here before (1/2 mile away). A/C went into a dive (in control) Engine was fine (sounded). A/C disappeared while in dive. Saw black smoke, assumed crash."

Another witness at the Country View Restaurant stated:

"[The airplane] flew low over tree line. He turned 90 degree bank to right, started to descend, nose down, entered trees out of sight, saw smoke."

The accident occurred during the hours of daylight at 44 degrees, 2.06 minutes north latitude, and 68 degrees, 39.72 degrees west longitude.

PERSONNEL INFORMATION

The pilot's logbook was not recovered. According to the pilot's last application for a Federal Aviation Administration (FAA) third class medical certificate, dated September 5, 2000, the pilot listed his total flight experience as 400 hours, with 50 hours in the preceding 6 months. Further, the pilot had received his private pilot certificate on January 4, 1983. He added his airplane single engine sea rating on August 18, 2000. On his airman application for the single engine sea rating, he listed his total flight experience as 380.6 hours, with 317.2 hours as pilot-in-command.

According to insurance company records, the pilot's total flight experience was 500 hours with 300 hours in tailwheel airplanes. His pilot- in command experience was estimated to be 430 hours.

The passenger held a student pilot certificate with a FAA third class medical certificate. According to FAA records, he had a total flight experience of 10 hours.

According to FAA medical records, the weight of the pilot was 223 pounds, and the weight of the passenger was 156 pounds.

AIRCRAFT INFORMATION

According to FAA records, on July 9, 2001, the previous owner of the airplane reported the sale and gave the address of the pilot as the new owner. There was no record that the pilot ever registered the airplane with the FAA in his name.

The fuel capacity of the airplane was 39 gallons with 38 gallons useable (228 pounds). The zero fuel weight of the airplane (airplane empty weight and occupants) was 1,583 pounds. According to weight and balance calculations, with 11 gallons of fuel, the airplane would have weighed 1,649 pounds. With 38 gallons of fuel, the airplane would have weighed 1,817 pounds. According to the type certificate data sheet, the maximum allowable gross weight was 1,650 pounds.

No fuel service was available at the airport where the pilot kept the airplane, and the actual fuel load at departure, and at the time of the accident was not determined.

The airplane was equipped with functioning dual flight controls in both the forward and aft seats. In addition, the occupant of the forward seat had access to the electric starter. Solo flight was limited to the front seat only. However, with two occupants either person would have access to the flight controls and could manipulate them.

WRECKAGE AND IMPACT INFORMATION

The airplane was examined at the accident site on August 6, 2001. Trees in the vicinity of the accident site were estimated to be about 75 feet high. Broken trees branches and tree trucks were found on a descending angle of about 30 degrees, in an easterly direction. The broken trees terminated at the accident site. A burn area, which was about 20 feet wide and over 100 feet long, started just prior the wreckage and continued in an easterly direction.

The outboard 5 feet of the right wing was found in two sections, the outboard 3 feet, and inboard adjacent 2 feet. Neither section was burned, and they were between broken trees, adjacent to the burn area.

No breaks were observed in the primary flight control cables. However, various attach points and fittings had melted in the fire and were not identified.

Both wing tank fuel caps were identified inside the burn area.

Several pieces of wood, cut at an angle with a semi-smooth finish, were found along the debris path. The largest was triangular in shape, and measured about 5 inches across.

The engine sump was not identified. The attachment bolts for the sump on the right side of the engine were bent aft. One float was recovered from the carburetor. The rest of the carburetor was not identified. The right magneto was found outside of the burn area, and when rotated, produced spark. The left magneto was separated from the engine, but remained within the fire area and could not be tested. The engine crankshaft was rotated, and piston, valve train, and rear accessory gear movement was observed. Compression testing was not accomplished due to the position of the engine, and stiffness of rotation. The lower spark plugs were gray in appearance and had no evidence of impact damage or combustion deposits.

The engine tachometer was burned. The tachometer needle indicated 2,500 rpm. The numbers for recording hours of use were melted, and not identified. The current hours were not obtained.

The outboard 24 inches of one propeller blade was not identified. The end of the blade was melted. The other blade was bent forward, and exhibited chord wise scratches, and leading edge impact damage.

MEDICAL AND PATHOLOGICAL INFORMATION

The toxicological testing report from the FAA Toxicology Accident Research Laboratory, Oklahoma City, Oklahoma, was negative for drugs and alcohol for the pilot.

On August 6 and 7, 2001, autopsies were performed on the occupants by the Office of the

Chief Medical Examiner, State of Maine, Augusta, Maine.

ADDITIONAL INFORMATION

The following information was found in FAA-H-8083-3, Airplane Flying Handbook: Chapter 5, Slow Flight Stalls, and Spins:

Accelerated Stalls

"...the pilot must thoroughly understand that all stalls result solely from attempts to fly at excessively high angles of attack. During flight, the angle of attack of an airplane wing is determined by a number of factors, the most important of which are the airspeed, the gross weight of the airplane, and the load factors imposed by maneuvering.

At the same gross weight, airplane configuration, and power setting, a given airplane will consistently stall at the same indicated airspeed if no acceleration is involved. The airplane will, however, stall at a higher indicated airspeed when excessive maneuvering loads are imposed by steep turns, pull-ups, or other abrupt changes in its flightpath. Stalls entered from such flight situations are called "accelerated maneuver stalls", a term, which has no reference to the airspeeds involved...."

"Stalls which result from abrupt maneuvers tend to be more rapid, or severe, than the unaccelerated stalls, and because they occur at higher-than-normal airspeeds, they may be unexpected by an inexperienced pilot. Failure to take immediate steps toward recovery when an accelerated stall occurs may result in a complete loss of flight control, notably, power-on spins."

"The pilot should recognize when the stall is imminent and take prompt action to prevent a completely stalled condition. It is imperative that a prolonged stall, excessive airspeed, excessive loss of altitude, or spin be avoided."

The aircraft wreckage was released to the insurance adjustor on August 7, 2001.

Pilot Information

Certificate:	Private	**Age:**	48,Male
Airplane Rating(s):	Single-engine land; Single-engine sea	**Seat Occupied:**	Front
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	Class 3 Valid Medical--no waivers/lim.	**Last FAA Medical Exam:**	September 5, 2000
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	August 18, 2000
Flight Time:	500 hours (Total, all aircraft), 430 hours (Pilot In Command, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Bellanca	**Registration:**	N80195
Model/Series:	7GCBC	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal; Utility	**Serial Number:**	270-70
Landing Gear Type:	Tailwheel	**Seats:**	2
Date/Type of Last Inspection:	August 14, 2000 Annual	**Certified Max Gross Wt.:**	1650 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	2015 Hrs as of last inspection	**Engine Manufacturer:**	Lycoming
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	O-320-A2B
Registered Owner:	On file	**Rated Power:**	150 Horsepower
Operator:	On file	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	BHB,84 ft msl	**Distance from Accident Site:**	14 Nautical Miles
Observation Time:	15:35 Local	**Direction from Accident Site:**	82°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	13 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	220°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.12 inches Hg	**Temperature/Dew Point:**	22°C / 18°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Blue Hill, ME (07B)	**Type of Flight Plan Filed:**	None
Destination:	(07B)	**Type of Clearance:**	None
Departure Time:	15:00 Local	**Type of Airspace:**	Class G

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	1 Fatal	**Aircraft Fire:**	On-ground
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 Fatal	**Latitude, Longitude:**	44.351112,-68.661941

Administrative Information

Investigator In Charge (IIC):	Hancock, Robert
Additional Participating Persons:	Jonathan Goode; Federal Aviation Administration; Portland, ME Dave Moore; Textron Lycoming; Williamsport, PA
Original Publish Date:	July 25, 2002
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=52925