		NTSB ID: CHI00FA186		Aircraft Registration Number: N8739V	
		Occurrence Date: 07/08/2000		Most Critical Injury: Fatal	
		Occurrence Type: Accident		Investigated By: NTSB	
Location/Time					
Nearest City/Place Capron		State IL	Zip Code 61012	Local Time 1855	Time Zone CDT
Airport Proximity: Off Airport/Airstrip		Distance From Landing Facility:		Direction From Airport:	
Aircraft Information Summary					
Aircraft Manufacturer Bellanca		Model/Series 8KCAB		Type of Aircraft Airplane	
Sightseeing Flight: No			Air Medical Transport Flight: No		
Narrative					
Brief narrative statement of facts, conditions and circumstances pertinent to the accident/incident:					
HISTORY OF FLIGHT					
<p>On July 8, 2000, at 1855 central daylight time, a Bellanca 8KCAB, N8739V, piloted by an airline transport pilot, sustained substantial damage during an in-flight collision with the terrain while maneuvering at a low altitude near Capron, Illinois. Visual metrological conditions prevailed at the time of the accident. The personal flight was operating under the provisions of 14 CFR Part 91 and was not on a flight plan. The pilot, the sole occupant, was fatally injured. The local flight departed the pilot's private airstrip near Capron, Illinois, at exact time unknown.</p> <p>According to an incident report prepared by the Boone County Sheriff Department, the aircraft's co-owner was a witness to the accident and was interviewed concerning the circumstances of the accident. The report states that the witness was inside his residence when he heard an airplane make low-pass over his property at approximately 500 feet above ground level (agl) from the south, heading northbound. The witness reported that he went outside and saw the accident airplane approach his residence from the southwest at an altitude of 40-50 feet agl. The witness stated that after the low-pass the airplane climbed to altitude of 500 feet agl. The witness reported that the airplane did another low-pass, at an altitude lower than the second pass, and finished the low-pass with a climb back to approximately 500 feet agl. The witness reported that on the fourth and final pass the airplane approached from the north and, "it [the accident airplane] barely cleared the power lines on the north side of the property along Randall Rd. and that after clearing the power lines [the pilot] pitched the nose forward slightly to increase the airspeed of the aircraft after which he pulled the nose upward to approximately a 30-40 degree pitch and gained some altitude... ." The witness reported, "[the pilot] then attempted a barrel roll to the left and after completing the maneuver the aircraft's nose was down and the right wing hit the ground causing the aircraft to nose into the ground." A copy of the Sheriff Department's incident report, including the witness interview, is attached to this factual report.</p>					
PERSONNEL INFORMATION					
<p>According to FAA records, the pilot was the holder of an airline transport pilot certificate with ratings for airplane multi-engine land and instrument airplane operations. The pilot also was the holder of a commercial pilot certificate for single-engine land airplanes and a flight engineer certificate for turbojet-powered airplanes. FAA records show the pilot's last medical examination was on April 12, 2000, and the pilot was issued a first-class medical certificate with the limitation, "Must Have Available Glasses For Near Vision".</p> <p>The pilot was reported to have accumulated a total flight time of approximately 20,200 hours, of which 4,200 hours were in single engine airplanes and 16,000 hours were in multiengine airplanes. The pilot had logged approximately 130 flight hours in the accident airplane make and model. The pilot was reported to have flown 269 hours in the last 90 days, of which 25 hours were in the</p>					
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National Transportation Safety Board

FACTUAL REPORT

AVIATION

NTSB ID: CHI00FA186

Occurrence Date: 07/08/2000

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Narrative (Continued)

accident airplane. The pilot was reported to have flown 89 hours in the last 30 days, of which 8 hours were in the accident airplane. The pilot was reported to have flown 1 hour during the last 24 hours.

AIRCRAFT INFORMATION

The aircraft was a Bellanca 8KCAB, N8739V, serial number 198-75. The Bellanca 8KCAB is a production built, dual strutted high-wing airplane consisting of a fabric covered steel-tube fuselage and a fabric covered wing. The Bellanca 8KCAB has a fixed landing gear and can accommodate a pilot and a single passenger in a tandem seating arrangement. The FAA issued the airplane a Standard Airworthiness Certificate on July 17, 1975, and the airplane was certificated for both normal and acrobatic categories. The airplane had accumulated a total-time of 1,076.00 hours at the time of the accident. The last annual inspection was completed on February 25, 2000, at 1,037.50 hours. According to the aircraft maintenance logbooks, all applicable FAA Airworthiness Directives were complied with at the completion of the last annual inspection.

The engine was a 150-horsepower Lycoming AEIO-320-E1B, serial number L-5329-55A, and at the time of the accident had accumulated 1,076.00 total hours since new. The engine had accumulated 242.30 hours since the last major overhaul.

The propeller was a Hartzell HC-C2YL-4, serial number DW201, and at the time of the accident had accumulated 1,076.00 hours since new.

METEOROLOGICAL INFORMATION

A weather observation station, located at the Greater Rockford Airport (RFD), 22 nautical miles southwest of the accident site, reported the weather 1 minute before the accident as:

Observation Time: 1854 cdt
 Wind: 170-degrees at 8 knots
 Visibility: 6 statute miles with haze
 Sky Condition: 3,800 feet agl Scattered, 4,700 feet agl Broken
 Temperature: 28-degrees centigrade
 Dew Point: 24-degrees centigrade
 Pressure: 30.02 inches of mercury


WRECKAGE AND IMPACT INFORMATION

An examination of the wreckage was conducted on July 9, 2000.

The airplane impacted a soybean field adjacent to a house located at 10799 Randall Road in the town of Capron, Illinois. All components of the aircraft were accounted for at the accident site.

Flight control cable continuity for the entire right aileron control circuit was established. The aileron balance cable was fragmented and exhibited signatures consistent with tensile overload failure. Control cable continuity for the left aileron could not be established because of impact damage and fragmentation that exhibited signatures consistent with tensile overload failure. Examination of the aileron control system and its associated components did not reveal any evidence of any pre-impact jam or failure.

Flight control cable continuity for the elevator system was established from elevator to the cockpit control stick. The control cable circuitry for the elevator trim was established from the trim surface to the cockpit. Examination of the elevator system and its associated components did not reveal any evidence of any pre-impact jam or failure.

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Narrative (Continued)

Flight control cable continuity for the rudder was established from the rudder to the cockpit rudder pedals. Examination of the rudder control cable circuit and associated components did not reveal any evidence of any pre-impact jam or failure.

Both main fuel tanks, located in the wings, were ruptured. A header-tank was installed and a fluid, blue in color and consistent with 100 low-lead aviation fuel, was found in an outflow fuel-line that traveled from the tank forward through the firewall.

No anomalies, relative to the airframe or its systems, were found that could be associated to any pre-impact condition.

Engine continuity was established throughout the engine and its accessories by rotating the engine at the propeller flange. The left magneto was damaged and no spark was generated when the engine was rotated at the propeller flange. The right magneto was removed and it provided spark on all leads when rotated by hand. A fluid, blue in color and consistent with 100 low-lead aviation fuel, was found in the flow divider that provides fuel to the fuel injectors. The upper spark plug leads were removed and their electrodes were light gray in color. The propeller blades had S-shape bending, leading edge gouges, and chordwise scratching.

No anomalies, relative to the engine or its accessories, were found that could be associated to any pre-impact condition.

MEDICAL AND PATHOLOGICAL INFORMATION

An autopsy was performed on the pilot at the Boone County Coroner Facility, Belvidere, Illinois, on July 11, 2000.

A Forensic Toxicology Fatal Accident Report was prepared by the FAA Civil Aeromedical Institute, Oklahoma City, Oklahoma.

The toxicology results for the pilot were:

- * No Carbon Monoxide detected in Blood
- * No Cyanide detected in Blood
- * No Ethanol detected in Vitreous
- * No Ethanol detected in Blood
- * 13 (mg/dL, mg/hg) Ethanol detected in Brain
- * 5 (mg/dL, mg/hg) Acetaldehyde detected in Brain

The toxicology report stated, "The ethanol found in this case is from postmortem ethanol formation and not from the ingestion of ethanol."

TESTS AND RESEARCH

According to the Bellanca 8KCAB Owner Manual, "Remember, altitude is your best insurance when doing aerobatics. According to Federal Aviation Regulations, the minimum legal altitude for aerobatics is 1500 feet AGL. Keep in mind that 1500 feet is therefore the minimum recovery altitude from any inadvertent maneuver and that 1000 feet of altitude can often be lost in a three-turn spin."

14 CFR Part 91.303, entitled "Aerobatic Flight", states:

"No person may operate an aircraft in aerobatic flight -

- (a) Over any congested area of a city, town, or settlement;
- (b) Over an open air assembly of persons;
- (c) Within the lateral boundaries of the surface areas of Class B, Class C, Class D, or Class E

National Transportation Safety Board

FACTUAL REPORT

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Narrative (Continued)

airspace designated for an airport;

(d) Within 4 nautical miles of the center line of any Federal airway;

(e) Below an altitude of 1,500 feet above the surface; or


(f) When flight visibility is less than 3 statute miles."


14 CFR Part 91.303 further states, "For the purposes of this section, aerobatic flight means an intentional maneuver involving an abrupt change in an aircraft's attitude, an abnormal attitude, or abnormal acceleration, not necessary for normal flight."

ADDITIONAL DATA/INFORMATION

A party to the investigation was the Federal Aviation Administration.

The wreckage was released to a representative of the Boone County Sheriff Department on July 9, 2000.

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		Occurrence Date: 07/08/2000			
		Occurrence Type: Accident			
Landing Facility/Approach Information					
Airport Name	Airport ID:	Airport Elevation Ft. MSL	Runway Used	Runway Length	Runway Width
Runway Surface Type:					
Runway Surface Condition:					
Type Instrument Approach: NONE					
VFR Approach/Landing: None					
Aircraft Information					
Aircraft Manufacturer Bellanca		Model/Series 8KCAB		Serial Number 198-75	
Airworthiness Certificate(s): Acrobatic; Normal					
Landing Gear Type: Tailwheel					
Homebuilt Aircraft? No	Number of Seats: 2	Certified Max Gross Wt.	1800 LBS	Number of Engines: 1	
Engine Type: Reciprocating	Engine Manufacturer: Lycoming	Model/Series: AEIO-320-E1B	Rated Power: 150 HP		
- Aircraft Inspection Information					
Type of Last Inspection Annual	Date of Last Inspection 02/2000	Time Since Last Inspection 38.5 Hours	Airframe Total Time 1076 Hours		
- Emergency Locator Transmitter (ELT) Information					
ELT Installed? Yes	ELT Operated? Yes	ELT Aided in Locating Accident Site? No			
Owner/Operator Information					
Registered Aircraft Owner Owl Aviation Services, INC.		Street Address 3511 Silverside Road, STE 105			
		City Willmington	State DE	Zip Code 19810	
Operator of Aircraft Same as Reg'd Aircraft Owner		Street Address Same as Reg'd Aircraft Owner			
		City	State	Zip Code	
Operator Does Business As:			Operator Designator Code:		
- Type of U.S. Certificate(s) Held: None					
Air Carrier Operating Certificate(s):					
Operating Certificate:			Operator Certificate:		
Regulation Flight Conducted Under: Part 91: General Aviation					
Type of Flight Operation Conducted: Personal					

 <p>National Transportation Safety Board FACTUAL REPORT AVIATION</p>	NTSB ID: CHI00FA186
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	Occurrence Type: Accident

First Pilot Information

Name On File	City On File	State On File	Date of Birth	Age 45
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Sex: M	Seat Occupied: Front	Principal Profession: Civilian Pilot	Certificate Number:
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Certificate(s): Airline Transport; Commercial; Flight Engineer

Airplane Rating(s): Multi-engine Land; Single-engine Land

Rotorcraft/Glider/LTA: None

Instrument Rating(s): Airplane

Instructor Rating(s): None

Type Rating/Endorsement for Accident/Incident Aircraft? No Current Biennial Flight Review?

Medical Cert.: Class 1 Medical Cert. Status: Valid Medical--w/ waivers/lim. Date of Last Medical Exam: 04/2000

- Flight Time Matrix	All A/C	This Make and Model	Airplane Single Engine	Airplane Multi-Engine	Night	Instrument		Rotorcraft	Glider	Lighter Than Air
						Actual	Simulated			
Total Time	20200	130	4200	16000						
Pilot In Command(PIC)										
Instructor										
Last 90 Days	269	25	35	234						
Last 30 Days	89	8	11	78						
Last 24 Hours	1	1	1	0						

Seatbelt Used? Yes Shoulder Harness Used? No Toxicology Performed? Yes Second Pilot? No

Flight Plan/Itinerary

Type of Flight Plan Filed: None

Departure Point Capron	State IL	Airport Identifier PVT	Departure Time	Time Zone CDT
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Destination Local Flight	State	Airport Identifier PVT	
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Type of Clearance: None

Type of Airspace: Class G

Weather Information

Source of Briefing:
No record of briefing

Method of Briefing: Unknown

 <p>National Transportation Safety Board FACTUAL REPORT AVIATION</p>	NTSB ID: CHI00FA186
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Weather Information

WOF ID	Observation Time	Time Zone	WOF Elevation	WOF Distance From Accident Site	Direction From Accident Site
RFD	1854	CDT	742 Ft. MSL	22 NM	225 Deg. Mag.

Sky/Lowest Cloud Condition: Scattered	3800 Ft. AGL	Condition of Light: Day
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Lowest Ceiling: Broken	4700 Ft. AGL	Visibility: 6	SM	Altimeter: 30.02	"Hg
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Temperature: 28 °C	Dew Point: 24 °C	Wind Direction: 170	Density Altitude: 2354 Ft.
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Wind Speed: 8	Gusts:	Weather Conditions at Accident Site: Visual Conditions
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Visibility (RVR): 0 Ft.	Visibility (RVV) 0 SM	Intensity of Precipitation:
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Restrictions to Visibility: Haze


Type of Precipitation: None

Accident Information

Aircraft Damage: Substantial	Aircraft Fire: None	Aircraft Explosion: None
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Classification: U.S. Registered/U.S. Soil

- Injury Summary Matrix	Fatal	Serious	Minor	None	TOTAL
First Pilot	1				1
Second Pilot					
Student Pilot					
Flight Instructor					
Check Pilot					
Flight Engineer					
Cabin Attendants					
Other Crew					
Passengers					
- TOTAL ABOARD -	1				1
Other Ground	0	0	0		0
- GRAND TOTAL -	1	0	0		1

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Administrative Information

Investigator-In-Charge (IIC)

Andrew T. Fox

Additional Persons Participating in This Accident/Incident Investigation:

Barb O Snowden
Inspector
Federal Aviation Administration
FAA, 31W775 North Avenue
West Chicago, IL 60185