		NTSB ID: MIA97FA152		Aircraft Registration Number: N5057F	
		Occurrence Date: 05/02/1997		Most Critical Injury: Fatal	
		Occurrence Type: Accident		Investigated By: NTSB	
Location/Time					
Nearest City/Place NEW SMYRNA BCH		State FL	Zip Code 32168	Local Time 1313	Time Zone EDT
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 May 2, 1997, about 1313 eastern daylight time, a Bellanca 8KCAB, N5057F, registered to a private owner, crashed into an open field near New Smyrna Beach, Florida. Visual meteorological conditions prevailed and no flight plan was filed for the 14 CFR Part 91 personal flight. The airplane was substantially damaged and the airline transport pilot, the sole occupant, was fatally injured. The flight originated about 1238 from Spruce Creek Airport, Daytona Beach, Florida.</p>					
<p>A friend of the pilot observed him in the front seat of the airplane and stated that the engine was started after two or three attempts then while the pilot was taxiing to the runway, the pilot waved to him. The weather conditions at the time were reported to be "CAVU", a term used to describe unlimited ceiling and visibility; everything appeared normal.</p>					
<p>A pilot-rated witness who was at his residence which was located 1.33 nautical miles due north of the crash site reported first hearing the engine which would run for 4-5 seconds then quit for 2-4 seconds then the cycle started again. The airplane at that time was just south of his house about 400-500 feet above ground level. The engine power interruption continued for about 4 minutes during which time while the engine was operating, the pilot would attempt to climb while circling. The circling continued while flying southbound and he reported occasionally losing sight of the airplane only to observe it climbing above the tree line. He estimated that during the flight the airspeed was 70-90 knots and while circling the bank angle was no more than 20-30 degrees. The last time he observed the airplane he estimated it was at 200 feet above ground level flying westbound. He did not witness the accident and reported a scattered layer of clouds at 3,500 to 4,000 feet. He further stated that there is a sod farm located west of his house. The distance from his house to a point about 300 yards west of the western edge of the approximate 600 acre sod farm was determined to be 1.29 nautical miles.</p>					
<p>Several other witnesses closer to the crash site reported seeing the airplane circling two times low over the trees. One of the witnesses observed the airplane attempt to pull up then observed the airplane "...instead went down 'head' propeller forward." The other witnesses reported seeing the airplane go inverted then descend vertically to impact with the ground.</p>					
PERSONNEL INFORMATION					
<p>Information pertaining to the pilot is contained on page 3 of the Factual Report-Aviation. Additionally, his pilot logbook was not located therefore his flight time experience could not be exactly determined. According to his last FAA medical application form dated October 19, 1995, he indicated that he had a total civilian pilot time to date of 22,500 hours with 50 hours flown in the previous 6 months. According to his son who is a certified flight instructor, he gave his father a Biennial Flight Review in January 1997, in the accident airplane.</p>					
FACTUAL REPORT - AVIATION					

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Narrative (Continued)

According to personnel who worked with or for the pilot in a cleaning business he owned, on the day of the accident, the pilot did not follow his routine of having a daily cup of coffee with an employee and he also reportedly tore up "IOU" notes from employees who owed him money. Additionally, on the day after the accident, an employee found a birthday card envelope in the freezer which was located in the back of the store that was owned by the pilot. The envelope was inscribed with "Dad" and "Thanks for the wonderful memories God knows I Love you both so much. We had a Hellava' good ride didn't we! Don't take life too seriously, its only a temporary place. I'll wait for you on the other side. Dad.-----". The envelope was reportedly given to the pilot as part of a birthday card a year earlier. The individual who found the note stated that the writing which followed the word "Dad" was written by the pilot to his son and daughter-in-law. The individual who turned the note over to the Sheriff's Department investigator reported that the pilot's son and wife asked him not to talk to anyone. Another employee was also asked by the pilot's son, wife, and daughter-in-law not to talk to any investigator about the crash.

The envelope was analysed by personnel from the Volusia County Sheriff Department personnel and compared to known handwritten documents by the pilot. The handwriting style was similar.

AIRCRAFT INFORMATION

Information pertaining to the airplane is contained on page 2 of the Factual Report-Aviation. Review of the provided maintenance records (airframe and engine logbook) revealed that they contained information from the first production test flight to an entry dated April 1, 1991, in which the entry indicated that the airplane was inspected in accordance with an annual inspection. Additional Aircraft Logbook information from April 29, 1991, to January 14, 1992, was reviewed which revealed that there was no record of another annual inspection. Additionally, on June 25, 1991, the maintenance records reflects that the servo fuel injector was removed for overhaul. According to paperwork from the facility that overhauled the servo fuel injector, in part, the fuel diaphragm was replaced.

According to the pilot's son, the airplane was last inspected in accordance with an annual inspection in May of 1996, by an unknown person. No determination could be made as to who last inspected the airplane. The pilot's son further stated that the last time he flew the airplane "was approximately 3 weeks maximum prior to the day of 2 May 97" and "I had no problems with the aircraft (airframe or engine) during this flight." That was the last time he had observed the aircraft and engine logs which were located inside the airplane. According to the owner of a fixed base operator at the departure airport, review of their records revealed that no work was done by his facility to the accident airplane between July 1, 1996, and May 4, 1997, when he was asked for maintenance information on that day by the NTSB Investigator-In-Charge.

METEOROLOGICAL INFORMATION

Visual meteorological conditions prevailed in the area at the time of the accident. Additional weather information is found on page 4 of the Factual Report-Aviation.

WRECKAGE AND IMPACT INFORMATION

Examination of the accident site revealed that the airplane crashed into a field which sparsely contained trees and was located 5.85 nautical miles and 200 degrees from the departure airport. The airplane was observed to be nearly inverted with the wings slightly greater than perpendicular to the ground with the empennage inverted and displaced to the left. All components necessary to sustain flight were in the immediate vicinity of the crash site. The airplane was observed on a magnetic heading of about 190 degrees. Chordwise crushing was noted to both wings and ground scars from the wing tips, wing leading edges, and both main landing gears was noted. No fire was noted but browning of grass was noted north of both wings. Examination of the rudder

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flight controls revealed control cable continuity from the control surface to the rear seat rudder pedals. Continuity to the front seat rudder pedals was also verified. Examination of the aileron and elevator flight control cables revealed continuity at each control surface to the rear seat control but the attach points at the rear control stick were failed. Examination of the fracture surfaces exhibited evidence of overload failure. Examination of the rudder revealed a hole in the fabric on the left lower side of the rudder nearly in-line with the position light. The hole corresponded with the trim tab attach hardware for the left elevator trim tab. The left elevator was observed to be displaced down near the tip and the outboard portion of the left elevator trim tab was observed to be displaced up. The emergency locator transmitter was located. See tests and research section of this report. The gascolator screen was examined and found to be clean.

Examination of the forward cockpit revealed that the mixture and throttle controls were full forward. The fuel selector was found in the "off" position and impact damage was noted to the handle. Examination of the servo fuel injector which was impact damaged revealed that the throttle control was in the full open position and the mixture control was in the "idle-cutoff" position. The throttle control cable rod end was connected to the throttle control arm but the rod end was failed at the threaded end due to impact damage. The mixture control cable was observed to be separated at the mixture control arm. The mixture cable attach hardware which consisted of a bolt, two washers, a nut, and a cotter key were observed to be in place. The attach hardware was removed for further examination. See tests and research section of this report. The engine was removed for further examination.

Examination of the engine revealed crankshaft, camshaft, and valve train continuity. The right magneto was tightly secured to the accessory case but impact damage precluded testing. The left magneto was partially separated from the accessory case which precluded determination of magneto to engine timing. The drive portion of the magneto was rotated by hand and spark at all towers was noted. Examination of the propeller revealed that both blades were bent aft with evidence of chordwise scratches noted on one of the blades. The engine was disassembled which revealed badly spalled faces of the hydraulic tappet bodies and associated wear of the camshaft lobes was noted. Additionally, foreign objects were found in the engine oil sump pan which included a broken snap ring, and the threaded portion of a small screw with attached nut. The engine-driven oil pump was removed from the accessory section and examination of the inside housing revealed it was scored and the oil pump gears were gouged. The air filter was observed to be in place and no blockage of the air induction system was noted. The engine-driven fuel pump received impact damage. The servo fuel injector inlet screen was determined to be clean and the servo was removed for bench testing which revealed minor discrepancies. (See the tests and research section).

MEDICAL AND PATHOLOGICAL INFORMATION

Postmortem examination of the pilot was performed by Ronald L. Reeves, M.D., of the Volusia County Medical Examiners Office, Daytona Beach, Florida. The cause of death was listed as blunt force trauma and the manner of death was listed as suicide.

Toxicological analysis of specimens of the pilot was performed by the FAA Toxicology and Accident Research Laboratory and the Wuesthoff Memorial Hospital. The results of analysis by the FAA was negative for volatiles and tested drugs. Carbon monoxide and cyanide testing was not performed due to lack of a suitable specimen. The results of testing by Wuesthoff was negative for carbon monoxide, volatiles, salicylate, cannabinoids, cocaine metabolite, opiates, and benzodiazepines. Caffeine, nicotine, and nicotine metabolite were detected in the urine.

TESTS AND RESEARCH

Examination of the impact damaged servo fuel injector revealed that the throttle valve was adjusted .014 inch greater than specification at idle which resulted in a fuel flow of 6 pounds per hour greater than specified. Additionally, examination of the exterior portion of the servo

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revealed a seal which partially covered the brass hex plug. The seal was imprinted with the letter "M" and wire was observed beneath the crimped seal. Bench testing of the servo revealed the fuel flow at full throttle and midrange were within limits however during smooth throttle reduction, the fuel flow momentarily remained high. Disassembly of the servo revealed that the fuel diaphragm stem was bent. Comparison of the part number of the installed fuel diaphragm with the overhaul records revealed a discrepancy. In accordance with overhaul procedures effective on September 20, 1982, the installed fuel diaphragm by part number was required to be changed.


Review of the type certificate data sheet and FAA list of Supplemental Type Certificates for the accident airplane revealed no listing for the installed propeller by make and model. Review of the available maintenance records revealed no entry which indicated installation of the propeller.


Examination of the installed emergency locator transmitter revealed that the battery expired in May 1996. Testing of the unit revealed it was not operational due to a dead battery.

Examination of the separated mixture control cable revealed that the end contained two nearly 45-degree angle cuts which formed a peak about the middle. Examination of the securing hardware revealed that a non-aviation washer was used to secure the cable. The washer contained indentations similar in width to the cable and the washer was observed to be failed. Examination of the bolt revealed the cable hole was drilled at about a 45-degree angle from the predrilled cotter key hole. According to the airplane type certificate holder, the cable hole is required to be drilled in line with the predrilled cotter key hole.

ADDITIONAL DATA/INFORMATION

The wreckage minus the retained servo fuel injector and a section of the mixture control cable assembly was released to Investigator J.R. Johnson of the Volusia County Sheriff's Department on May 4, 1997. The retained components and materials were shipped via Federal Express in two boxes on December 2, 1997. Both boxes were delivered at 1354 local time on December 4, 1997, to the home address of the pilot's son and were signed for by a "S. May." The wreckage release form which was included in one of the boxes was not returned as requested.

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		Occurrence Type: Accident			
Landing Facility/Approach Information					
Airport Name	Airport ID:	Airport Elevation Ft. MSL	Runway Used 0	Runway Length	Runway Width
Runway Surface Type:					
Runway Surface Condition:					
Type Instrument Approach:					
VFR Approach/Landing:					
Aircraft Information					
Aircraft Manufacturer Bellanca		Model/Series 8KCAB		Serial Number 545-79	
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-E2B	Rated Power: 150 HP		
- Aircraft Inspection Information					
Type of Last Inspection Unknown	Date of Last Inspection	Time Since Last Inspection Hours	Airframe Total Time Hours		
- Emergency Locator Transmitter (ELT) Information					
ELT Installed? Yes	ELT Operated? No	ELT Aided in Locating Accident Site?			
Owner/Operator Information					
Registered Aircraft Owner LESTER H. & MARGARET A. MAY		Street Address 2895 GRUMMAN COURT			
		City DAYTONA BEACH	State FL	Zip Code 32124	
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					

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First Pilot Information

Name On File	City On File	State On File	Date of Birth On File	Age 61
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Sex: M	Seat Occupied: Front	Principal Profession: Retired	Certificate Number: On File
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Certificate(s): Airline Transport; Commercial

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?
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Medical Cert.: Class 3	Medical Cert. Status: Valid Medical--no waivers/lim.	Date of Last Medical Exam: 10/1995
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- 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	22500									
Pilot In Command(PIC)										
Instructor										
Last 90 Days										
Last 30 Days										
Last 24 Hours										

Seatbelt Used? Yes	Shoulder Harness Used? No	Toxicology Performed? Yes	Second Pilot? No
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Flight Plan/Itinerary

Type of Flight Plan Filed: None

Departure Point DAYTONA BEACH	State FL	Airport Identifier 44J	Departure Time 1238	Time Zone EDT
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Destination Local Flight	State	Airport Identifier	
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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:

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Weather Information

WOF ID	Observation Time	Time Zone	WOF Elevation	WOF Distance From Accident Site	Direction From Accident Site
DAB	1253	EDT	35 Ft. MSL	12 NM	2 Deg. Mag.

Sky/Lowest Cloud Condition: Scattered 3400 Ft. AGL Condition of Light: Day

Lowest Ceiling: None 0 Ft. AGL Visibility: 10 SM Altimeter: 30.00 "Hg

Temperature: 27 °C Dew Point: 18 °C Wind Direction: Variable Density Altitude: Ft.

Wind Speed: 3 Gusts: Weather Conditions at Accident Site: Visual Conditions

Visibility (RVR): 0 Ft. Visibility (RVV) 0 SM Intensity of Precipitation: Unknown

Restrictions to Visibility: None

Type of Precipitation: None

Accident Information

Aircraft Damage: Substantial Aircraft Fire: None Aircraft Explosion: None

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)

TIMOTHY W. MONVILLE

Additional Persons Participating in This Accident/Incident Investigation:

ALAN NEMCIK
FAA FSDO
ORLANDO, FL