



National Transportation Safety Board Aviation Accident Final Report

Location:	Daytona Beach, FL	Accident Number:	MIA04LA071
Date & Time:	04/14/2004, 1915 EST	Registration:	N301KS
Aircraft:	Beech Be-300	Aircraft Damage:	Destroyed
Defining Event:		Injuries:	2 Serious
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

The pilot stated that he initiated a fuel transfer due to a fuel imbalance. To affect the fuel transfer, he said he "began crossfeed right to left." When the airplane was about 5 to 10 miles away from Spruce Creek Airport, the pilot said he began his descent from 12,500, and also executed a left turn to begin setting up to land, when suddenly, both engines ceased operating. When he leveled the wings both engines restarted due to auto-ignition. He said the fuel gages showed 300 to 350 lbs of fuel for the right tank, and 100 to 150 pounds on the left, so he decided to continue his approach to Spruce Creek Airport. As he approached Spruce Creek Airport, he again entered a left bank to prepare for a left base to runway 23, and while established in the left turn, both engines ceased operating a second time. He said he did not think he could reach the runway, and decided to make an landing on a taxiway. When the wings became level after the turn, he said both engines again restarted while in the vicinity of the beginning of the taxiway. As he was about to land, he said a car pulled out onto the taxiway, and stopped on the centerline, so he applied power to avoid the car. He said he climbed straight out, and when he made a climbing left turn, he said the engines ceased operating a third time, and the airplane descended towards a cluster of condos. With no runway or clear area in sight, the pilot said he guided the airplane to a retention pond. Follow-on/detailed examinations of the aircraft, engines, and propellers were conducted by an FAA Inspector, as well as technical representatives from Raytheon Aircraft Company, Pratt & Whitney Canada, and Hartzell Propeller Company, and no preaccident anomalies were noted with the airframe, flight controls, engines/accessories, or propellers. According to the FAA Inspector, and the technical representative from the airplane manufacturer, Raytheon Aircraft Company, the pilot was transferring fuel from the left fuel tank to the right fuel tank, and with the reduced amount of fuel in the left tank, as he performed left turns, the engine ceased operating. The Raytheon Aircraft Company representative stated that the Pilot Operating Handbook specifies the use of crossfeed for those times when the airplane is operating on a single engine.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's inadequate management of the airplane's fuel system, which resulted in fuel

starvation, a loss of engine power, a forced landing, and damage to the airplane during the landing.

Findings

Occurrence #1: LOSS OF ENGINE POWER(TOTAL) - NONMECHANICAL

Phase of Operation: APPROACH

Findings

1. (C) FUEL MANAGEMENT - INADEQUATE - PILOT IN COMMAND
2. FUEL SYSTEM,CROSS-FEED VALVE - INCORRECT
3. FLUID,FUEL - STARVATION

Occurrence #2: FORCED LANDING

Phase of Operation: EMERGENCY DESCENT/LANDING

Occurrence #3: IN FLIGHT COLLISION WITH OBJECT

Phase of Operation: EMERGENCY LANDING

Findings

4. OBJECT - RESIDENCE
5. OBJECT - TREE(S)

Occurrence #4: IN FLIGHT COLLISION WITH TERRAIN/WATER

Phase of Operation: DESCENT - UNCONTROLLED

Findings

6. TERRAIN CONDITION - GROUND

Factual Information

HISTORY OF FLIGHT

On April 14, 2004, about 1915 eastern standard time, a Beech 300, N301KS, registered to and operated by a private individual, as a Title 14 CFR Part 91 personal flight, crashed while maneuvering to land at Spruce Creek Airport, Daytona Beach, Florida. Visual meteorological conditions prevailed, and no flight plan was filed. The commercial-rated pilot received minor injuries, and one passenger received serious injuries, and the airplane was destroyed. The flight originated at Stuart Airport, Florida the same day, about 1845.

A witness, who is also a multiengine rated flight instructor, stated that he had been out walking his dog, and was proceeding on Cessna Boulevard when he first saw the accident airplane. He further stated that Cessna Boulevard is an old runway that has since been closed, and made into a taxiway. He observed the accident airplane on a left low base, turning to short final. He stated that the landing gear and flaps were extended, and the airplane appeared to be at an appropriate approach power setting. He stated he was in the center of the taxiway at the time, and the airplane was coming toward him, so he exited the taxiway toward one of the residential properties, and after the airplane passed him, he returned to the taxiway. He said he observed the airplane descend to an altitude of about 30 feet, and it remained at that altitude as it proceeded down the full length of the taxiway. He said that at no time did the airplane appear to commit to land, and further commented that maybe it was because there were pedestrians on the taxiway. He said he observed the airplane pitch up, but that the landing gear and flaps were not retracted, nor was there any audible application of engine power. He said the airplane climbed to about 100 feet AGL and it turned to the left to a heading of about 230 degrees. He said the wind had been favoring runway 23, and it looks like the pilot was attempting to turn the airplane to land on runway 05, while maintaining a high angle of attack. He said that he then saw the airplane dip below the tree line and then he heard the impact. He stated that he heard and saw nothing to suggest that both engines were not operating normally the whole time.

A second witness working inside his hangar said he was startled by a very loud noise of the King Air, which he observed flying westbound over the end of the hangar, no more than seventy five feet above the ground. The engines sounded normal and the aircraft was level with the gear down. He said he ran outside past the end of the hangar and observed the accident aircraft continue westbound, into the bright sun, at an altitude of no more than one hundred feet. The aircraft continued across runway 23, flying westbound slightly above the trees in the vicinity of the golf course. The aircraft then entered a shallow left turn at an estimated distance of one mile from his position at the center of the airport on Cessna Boulevard taxiway. The aircraft continued in the left turn at very low level, never exceeding 150 feet, and disappeared from his vision behind the Hawks Nest Hangar buildings, on the south side of Cessna Blvd, formerly runway 08-26. After several seconds, he said he heard the sounds of the crash, and immediately telephoned 911.

The pilot stated that prior to his departure from Stuart Airport he ordered 100 gallons of Jet-A fuel and directed that 50 gallons be placed in each wing. He said he departed Stuart, Florida, about 1845, en route to Spruce Creek Airport, estimating the flight duration to be 30 minutes. About 25 miles from Spruce Creek Airport, the pilot said that he initiated a fuel transfer due to a fuel imbalance, and to affect the crossfeed, he "began crossfeed right to left." He began a

descent at 12,500 feet, about 5 to 10 miles from Spruce Creek Airport, and when he made a left turn, both engines ceased operating. He said he saw level green fields in front of him, and flew the airplane toward them. He made a radio communications transmission declaring an emergency, and then began to assess the nature of the problem, but when he leveled the wings, both engines restarted as a result of the auto ignition system. He said he noted 300 to 350 lbs of fuel depicted on the right fuel gauge, and 100 to 150 lbs on the left fuel gauge, and decided to continue his approach to the airport. During the approach, as he entered a left banking turn for a left base to runway 23, while established in the left turn, both engines "flamed out" a second time. He said he did not think he could reach the runway, so he and decided to make an immediate landing on the taxiway, which was formerly runway 28." With the wings level again, he said the engines restarted a second time when he was just off the end of the taxiway/runway, and as he was about to land, a car pulled out onto the taxiway and stopped on the centerline. He said he then applied power to avoid the car, climbing straight ahead, and while in a climbing left turn, both engines ceased operating third time. He said as the airplane descended, it was approaching a cluster of condos, and no space was available to land, so he guided the airplane to the retention pond.

PERSONNEL INFORMATION

Records obtained from the FAA showed that the pilot-in-command held commercial pilot certificate with airplane single and multiengine land, instrument airplane, as well as a Type Rating for the Beech 300, issued on April 2, 2002.

FAA records indicated that the pilot's medical certificate had expired, and he had last received an FAA second class certificate on February 28, 2002. In the pilot's report to the NTSB, he reported having obtained an FAA class 1 medical certificate, but added in the report, that the date of the medical was unknown. He also reported having received a Flight Review in the Beech 300.

The pilot's personal flight log was not provided to the NTSB, but according to information he provided in a report to the NTSB, he had accumulated a total of 3,495 hours of flight experience, of which 118 hours were in the Beech 300. He also reported having flown 14 hours in the Beech 300 in the past 90 days, and 5 hours were in the past 24 hours

AIRCRAFT INFORMATION

N30KS is a 1985 Beech 300, serial number FA-61. Records showed that the pilot acquired the airplane on November 30, 2001. It had been given a continuous airworthiness inspection on October 10, 2003. The airplane is equipped with two Pratt & Whitney, PT-6 turbo-propeller engines, each rated at 1,050-horse power. The number one engine was manufactured in 1985 serial number PCE 95127, accumulating 170 hours since the last inspection and the number 2 engine, serial number PCE 95128, accumulating 132 hours since the last inspection. The airplane was is equipped with two model HC-B4MP-3B constant speed Hartzell Propellers.

METEOROLOGICAL INFORMATION

Visual meteorological conditions prevailed at the time of the accident. The Daytona Beech International Airport, Daytona beach Florida, 1853, surface weather observation was wind from 250 degrees at 8 knots, visibility 10 statute miles, few clouds at 2,100 feet, temperature 16 degrees Celsius, dew point temperature 01 degree Celsius, altimeter setting 30.01 inHg. Daytona Beech International Airport is located 6 nautical miles north west of the accident site.

WRECKAGE AND IMPACT INFORMATION

Information obtained from the FAA accident inspector who responded to the accident scene, revealed that the airplane initially impacted a small pine tree, followed by the roof of a residence. He further stated that accident related debris was spread over a wide area and the airplane had come to rest in the vicinity of a retention pond.

All necessary components to sustain flight was present at the accident site, and flight control cable continuity was verified for roll, pitch and yaw. The landing gear was confirmed to have been in their extended positions, and the flaps were found to have been in the retracted or up position. Examination of the airplane revealed that the forward section of the fuselage and nose had incurred impact damage. The nose landing gear, nose and forward section of the fuselage surrounding the nose gear had largely separated from the airplane, and the forward pressure bulkhead as well as the remainder of the forward section of the fuselage had buckled and was tucked under the main airplane fuselage. The instrument panel was in a near horizontal position, and the breach exposed the cockpit to the outside environment. The pilot and copilot seats had remained in place, but due to the buckled floor, consistent with the nose gear separation and damage to the nose, was leaning forward. The fuselage aft of the rear pressure bulkhead, and the empennage had separated from the airplane, and was lying near the main wreckage.

Rescue personnel had reportedly turned off the switches on the instrument panel, and specifically, the "Crossfeed Flow/Fuel Transfer" switch was noted to be in the "Off" position. The propeller "Auto-feather" switch was in the "Arm" position, and the Right Ignition and Engine Start switch was in the "On" position. Engine control levers were all in the "Full Forward" position, except for the right propeller lever, which was in a midrange position.

The empennage was complete but had incurred some damage. Additional damage included the left and right wings outboard of their respective nacelles which had incurred damage consistent with impact forces. The left wing outboard portion was crushed and had torn near its wing fittings. The aileron and outboard flap had remained with the wing, but were mostly separated from it. Flight control cables to the wing had been pulled out of the outboard section of the wing, and the right outboard section consisted of two large pieces of wing, with about one-foot section missing from the middle. The right aileron was complete and separated from the wing, and the right outboard flap was partially separated as well.

TESTS AND RESEARCH

Follow-on/detailed examinations of the aircraft, engines, and propellers, were conducted by an FAA Inspector, as well as technical representatives from Raytheon Aircraft Company, Pratt & Whitney Canada, and Hartzell Propeller Company. No preaccident anomalies were noted with the accident airplane's airframe, flight controls, engines/accessories, or propellers.

The pilot stated that the airplane's fuel tanks contained about 250 to 300 pounds of fuel per side when he landed at Stuart, Florida. He further stated that he purchased 100 gallons of Jet-A fuel from Galaxy Aviation, at Stuart Airport, and he estimated his time en route to be 30 minutes, and the airplane's fuel burn to be about 55 to 65 gallons per hour. Section 5, page 5-67 of the Pilot's Operating Handbook (POH), gives an indication fuel burn rates associated with that model aircraft/engines.

In addition, the Raytheon Aircraft Beech King Air 300 POH specifies the use of crossfeed for those times when the airplane is operating on a single engine. According to the FAA Inspector,

and the technical representative from the airplane manufacturer, Raytheon Aircraft Company, the pilot was transferring fuel from the left fuel tank to the right fuel tank, and with the reduced fuel pressure on the left, as he performed left turns, the engine ceased operating whenever he was performing a left turn.

Pilot Information

Certificate:	Commercial	Age:	51, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Front
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Unknown	Last Medical Exam:	
Occupational Pilot:		Last Flight Review or Equivalent:	
Flight Time:	3495 hours (Total, all aircraft), 147 hours (Total, this make and model), 3434 hours (Pilot In Command, all aircraft), 43 hours (Last 90 days, all aircraft), 18 hours (Last 30 days, all aircraft), 5 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	Beech	Registration:	N301KS
Model/Series:	Be-300	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	FA61
Landing Gear Type:	Retractable - Tricycle	Seats:	10
Date/Type of Last Inspection:	10/09/2003, Continuous Airworthiness	Certified Max Gross Wt.:	14000 lbs
Time Since Last Inspection:	246 Hours	Engines:	2 Turbo Prop
Airframe Total Time:		Engine Manufacturer:	Pratt & Whitney
ELT:	Installed, activated, did not aid in locating accident	Engine Model/Series:	PT6-60A
Registered Owner:	Mass Bay Kustom Leasing INC.	Rated Power:	1050 hp
Operator:	Mass Bay Kustom Leasing/Michael Rezendes	Air Carrier Operating Certificate:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	DAB, 31 ft msl	Observation Time:	1853 EST
Distance from Accident Site:	6 Nautical Miles	Direction from Accident Site:	350°
Lowest Cloud Condition:	Few / 21 ft agl	Temperature/Dew Point:	16° C / 1° C
Lowest Ceiling:	None	Visibility	10 Miles
Wind Speed/Gusts, Direction:	8 knots, 270°	Visibility (RVR):	
Altimeter Setting:	30.01 inches Hg	Visibility (RVV):	
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Stuart, FL (SUA)	Type of Flight Plan Filed:	None
Destination:	Daytona Beach, FL (7FL6)	Type of Clearance:	None
Departure Time:	1845 EST	Type of Airspace:	Class G; Restricted Area

Airport Information

Airport:	Spruce Creek Airport (7FL6)	Runway Surface Type:	Asphalt
Airport Elevation:		Runway Surface Condition:	Dry
Runway Used:	28	IFR Approach:	None
Runway Length/Width:	3000 ft / 200 ft	VFR Approach/Landing:	Forced Landing; Full Stop

Wreckage and Impact Information

Crew Injuries:	1 Serious	Aircraft Damage:	Destroyed
Passenger Injuries:	1 Serious	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 Serious	Latitude, Longitude:	29.078056, -81.044444

Administrative Information

Investigator In Charge (IIC):	John W Lovell	Adopted Date:	10/27/2005
Additional Participating Persons:	Jim Reid; FAA FSDO; Orlando, FL Brian D Cassidy; Raytheon Aircraft Company; Wichita, KS Thomas A Berthe; Pratt & Whitney Canada; Quebec, Tom McCreary; Hartzell Propeller Inc.; Piqua, OH		
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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