National Transportation Safety Board
Aviation Accident Final Report

Location:	ROMULUS, MI	**Accident Number:**	CHI99FA105
Date & Time:	03/11/1999, 0051 EST	**Registration:**	N234L
Aircraft:	Beech C-45G	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	1 Fatal
Flight Conducted Under:	Part 91: General Aviation - Positioning		

Analysis

The aircraft declared an emergency following departure from runway 03R at Detroit Metropolitan Wayne County Airport, Romulus, Michigan. The aircraft was resting on a magnetic heading of 055 degrees located approximately 3,400 feet from and 1,900 feet to the left of the departure end and centerline of runway 03R at DTW. Inspection of the forward section of the fuselage door and surrounding fuselage, a circular impression with no exposure of the underlying metal was noted approximately 2 feet 6-1/2 inches from the door hinge line. The door was opened to a point nearly flush with the aircraft's fuselage. The door handle was found to match the circular impression in position and shape. There was no tearing or fracturing of the forward fuselage door pin tips or its door pin holes. Inspection of the door's latching mechanism revealed a brown colored nail connecting the handle and vertical latches. Both engine supercharger turbine wheels displayed scoring and deformation of the impeller blades in the plane of rotation. Aileron, elevator and rudder flight control continuity was established. The elevator trim was in the neutral position. The trailing edge flaps were in the retracted positions. Both engine oil screens showed no evidence of metal contamination.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the aircraft control not maintained and the inadvertent stall by the pilot while maneuvering to the landing area. The open door was a contributing factor.

Findings

Occurrence #1: AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION
Phase of Operation: CLIMB

Findings
1. (F) DOOR,CARGO/BAGGAGE - OPEN
2. CARGO/BAGGAGE - NOT SECURED

Occurrence #2: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: MANEUVERING - TURN TO LANDING AREA (EMERGENCY)

Findings
3. (C) AIRCRAFT CONTROL - NOT MAINTAINED - PILOT IN COMMAND
4. (C) STALL - INADVERTENT - PILOT IN COMMAND
5. USE OF INAPPROPRIATE MEDICATION/DRUG - PILOT IN COMMAND

Occurrence #3: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: DESCENT - UNCONTROLLED

Factual Information

HISTORY OF FLIGHT

On March 11, 1999, at 0051 eastern standard time, a Beech C-45G, N234L, operated by B.A.J Aircraft Management Group, Incorporated (BAJ), was destroyed on impact with terrain after departure from runway 03R (10,000 feet by 150 feet, dry concrete) at the intersection of taxiway F from Detroit Metropolitan Wayne County Airport (DTW), Romulus, Michigan. Night visual meteorological conditions prevailed at the time of the accident. The 14 CFR Part 91 positioning flight was not operating on a flight plan. The commercial pilot was fatally injured. The flight departed from DTW en route to Willow Run Airport near Belleville, Michigan at approximately 0049.

Air traffic control transcripts indicate at 0044:40 the pilot had received a visual flight rules (VFR) clearance at or below 2,000 feet msl to Willow Run Airport. At 0049:08, the aircraft was instructed to turn left direct to Willow Run Airport and was subsequently cleared for takeoff. The pilot's last radio communication with air traffic control occurred at 0050:55; the pilot declared an emergency and reported that he was, "turn around right now".

A witness reported that he first saw the aircraft at an altitude as high as the Ford hanger. When the aircraft turned left, its left wing appeared to be perpendicular to the ground. He added that the aircraft appeared not to lose altitude until it started to roll. The witness also stated that the aircraft started to lose altitude at about a 45 degree angle.

A first respondent stated that the fuselage door was open and that he "did not have to deal with any seatbelt" during the pilot's rescue. He also stated that a wooden pallet skid orientated with its wheels facing rearwards along with other items found on the floor of the aircraft were unsecured.

PERSONNEL INFORMATION

The pilot was 42 years old and the Director of Operations for BAJ. He held a commercial pilot certificate with airplane single engine land, multiengine land and instrument airplane ratings which was issued on May 28, 1994. At the time of certificates issuance, the pilot reported a total airplane flight time of 514 hours of which 86 hours were in a Piper PA34-200. The pilot reported a flight time of 1,305 hours of which 165 hours were in the past 6 months at the issuance of his second class medical certificate on June 1, 1998.

AIRCRAFT INFORMATION

The aircraft was certified as a normal category aircraft. The aircraft's useful load was 3,097 lbs. Based upon aircraft maintenance records, a cargo door installation in accordance with STC #SA995WE was completed on March 4, 1996. According to maintenance records, the aircraft was last inspected during an annual inspection on December 13, 1998 at a total airframe time of 7,021 hours. The records also show that on February 20, 1999, the aircraft had accumulated a total airframe time of 7,072.9 hours.

According to BAJ's operations specifications dated February 24, 1999, the accident aircraft was the only aircraft approved to conduct operations under CFR Part 135. It indicated that the aircraft was to conduct only on demand cargo operations in day or night and visual flight rules (VFR) or instrument flight rules (IFR) conditions.

AIRPORT INFORMATION

The airport elevation of DTW is 640 feet msl. Runway 03R's magnetic heading is 035 degrees and is paralleled by runway 03L and 03C; all of which are equipped with high intensity runway lighting. Taxiway F intersects runway 03R approximately 5,700 feet from its departure end.

METEOROLOGICAL INFORMATION

The DTW automated surface observing system reported at 0054, a wind from 300 degrees at 5 knots; 10 smi visibility, clear sky conditions; at temperature of 19 degrees F and dewpoint of 12 degrees F; a altimeter setting of 30.23 inches of mercury.

Moonrise was forecast at 0237 with 37 percent of the moon's visible disc illuminated.

WRECKAGE AND IMPACT INFORMATION

The aircraft was resting on snow covered concrete overrun area from runway 03C. The aircraft was resting on a magnetic heading of 055 degrees located approximately 3,400 feet from and 1,900 feet to the left of the departure end and centerline of runway 03R at DTW. The nose of the aircraft and the aircraft's wing leading edges exhibited a 90 degree crush angle relative to the vertical or upwards direction of the aircraft. All flight control surfaces were found intact with the main wreckage with no damage to the empennage. The fuselage and empennage did not display sideways bending. The landing gear was in its extended position. There was no evidence of fire. There was black oil spray on and surrounding the main wreckage.

Aileron, elevator and rudder flight control continuity was established. The elevator trim tab was in the neutral position. The trailing edge flaps were in the retracted positions.

Upon inspection of the forward section of the fuselage door and surrounding fuselage, a circular impression with no exposure of the underlying metal was noted approximately 2 feet 6-1/2 inches from the door hinge line. The door was opened to a point nearly flush with the aircraft's fuselage. The door handle was found to match the circular impression in position and shape. There was no tearing or fracturing of the forward fuselage door pin tips or its door pin holes. Inspection of the door's latching mechanism revealed a brown colored nail connecting the handle and vertical latches.

Contents within the cabin of the aircraft included one pallet skid estimated to weigh 30 lbs, tools estimated to weigh 30 lbs, 5 qts of oil, a two-step metal ladder, a metal tow bar, and an engine oil cooler. The contents within the cabin were found unsecured.

Fuel was leaking from the aircraft during and after recovery. The fuel selectors were found selected to the main fuel tanks and were in their detent positions. The "suction crossfeed" was found in the "off" position. The engine driven fuel pumps were able to be rotated. The auxiliary fuel pumps from the main fuel tanks were connected to an electrical source and were found to operate.

Both engine supercharger turbine wheels displayed scoring and deformation of the impeller blades in the plane of rotation. Both engine oil screens showed no evidence of metal contamination.

Examination of propeller blades on both engines showed gouging on the leading edges of the blades in the rotational direction with twisting on the blade tips. The pitch change links to each propeller assembly exhibited twisting and bending.

TEST AND RESEARCH

According to the Airplane Flight Manual Supplement, the approximate stalling speed of the aircraft with the flaps retracted was 78 knots

Fueling records indicate that the accident aircraft obtained 107 gallons of 100 low lead aviation fuel prior to the accident flight.

MEDICAL AND PATHOLOGICAL INFORMATION

An autopsy was performed by the Wayne County Medical Examiner, Detroit, Michigan.

Federal Aviation Administration toxicological results tested positive for 0.013 (ug/mL, ug/g) fluoxetine and 0.16 (ug/mL, ug/g) norfluoxetine. Fluoxetine is a prescription antidepressant with the trade name Prozac. Norfluoxetine is a metabolite of fluoxetine.

The Physicians Desk Reference, states the following for Prozac: "Interference With Cognitive and Motor Performance-Any psychoactive drug may impair judgement, thinking, or motor skills and patients should be cautioned about operating hazardous machinery, including automobiles, until they are reasonably certain that the drug treatment does not affect them adversely.

ADDITIONAL INFORMATION

The FAA and Raytheon Aircraft Company were parties to the investigation.

The wreckage was released to the father of the pilot.

Pilot Information

Certificate:	Commercial	**Age:**	42, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	Class 2 Valid Medical--no waivers/lim.	**Last FAA Medical Exam:**	06/01/1998
Occupational Pilot:		**Last Flight Review or Equivalent:**	
Flight Time:	1305 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Beech	**Registration:**	N234L
Model/Series:	C-45G C-45G	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	No
Airworthiness Certificate:	Normal	**Serial Number:**	51-11890
Landing Gear Type:	Retractable - Tricycle	**Seats:**	2
Date/Type of Last Inspection:	12/13/1998, Annual	**Certified Max Gross Wt.:**	9800 lbs
Time Since Last Inspection:	51 Hours	**Engines:**	2 Reciprocating
Airframe Total Time:	7073 Hours	**Engine Manufacturer:**	P&W
ELT:	Installed, not activated	**Engine Model/Series:**	R-985
Registered Owner:	BAJ AIRCRAFT MANAGEMENT	**Rated Power:**	450 hp
Operator:	BAJ AIRCRAFT MANAGEMENT	**Operating Certificate(s) Held:**	Air Cargo
Operator Does Business As:		**Operator Designator Code:**	QOOA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	**Condition of Light:**	Night/Dark
Observation Facility, Elevation:	DTW, 633 ft msl	**Distance from Accident Site:**	0 Nautical Miles
Observation Time:	0054 EST	**Direction from Accident Site:**	0°
Lowest Cloud Condition:	Clear / 0 ft agl	**Visibility**	10 Miles
Lowest Ceiling:	None / 0 ft agl	**Visibility (RVR):**	0 ft
Wind Speed/Gusts:	5 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	300°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30 inches Hg	**Temperature/Dew Point:**	-7°C / -11°C
Precipitation and Obscuration:			
Departure Point:	, MI (DTW)	**Type of Flight Plan Filed:**	None
Destination:	BELLEVILLE, MI (YIP)	**Type of Clearance:**	VFR
Departure Time:	0049 EST	**Type of Airspace:**	Class B

Airport Information

Airport:	DETROIT METROPOLITAN (DTW)	**Runway Surface Type:**	
Airport Elevation:	640 ft	**Runway Surface Condition:**	
Runway Used:	3R	**IFR Approach:**	None
Runway Length/Width:	10000 ft / 150 ft	**VFR Approach/Landing:**	

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	N/A	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Fatal	**Latitude, Longitude:**	

Administrative Information

Investigator In Charge (IIC):	MITCHELL F GALLO	**Report Date:**	11/30/2000
Additional Participating Persons:	MARTIN SOLVBERG; BELLEVILLE, MI STUART E BOTHWELL; WICHITA, KS		
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.ntsb.gov/pubdms/.		