



# National Transportation Safety Board Aviation Accident Final Report

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<b>Location:</b>	LAKE ELMO, MN	<b>Accident Number:</b>	CHI98LA003
<b>Date &amp; Time:</b>	10/02/1997, 0605 CDT	<b>Registration:</b>	N916TM
<b>Aircraft:</b>	Beech E18S	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>		<b>Injuries:</b>	2 None

**Flight Conducted Under:** Part 91: General Aviation - Positioning

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## Analysis

The pilot reported that the airplane lifted off at 70 knots. After accelerating in ground effect the airplane became 'unstable in the roll axis' so he added power. He reported that the left wing tip contacted the runway approximately 3/4 the way down the runway. The pilot then added additional power at which point the left wing contacted the grass off the left side of the departure end of the runway. The pilot then reduced the power to idle and landed the airplane in the grass collapsing the landing gear. The pilot reported that the engines sounded normal throughout the accident sequence. Investigation revealed another Beech 18 had taken off on the same runway, but in the opposite direction of N916TM less than one minute prior to the accident.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the pilot's failure identify the unsafe condition (vortex turbulence) which existed due to departing airplane and his subsequent inability to control the airplane once encountering the turbulence.

## Findings

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Occurrence #1: VORTEX TURBULENCE ENCOUNTERED  
Phase of Operation: TAKEOFF - INITIAL CLIMB

### Findings

1. (C) UNSAFE/HAZARDOUS CONDITION - NOT IDENTIFIED - PILOT IN COMMAND
2. (C) AIRCRAFT CONTROL - NOT POSSIBLE - PILOT IN COMMAND

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Occurrence #2: DRAGGED WING, ROTOR, POD, FLOAT OR TAIL/SKID  
Phase of Operation: TAKEOFF - INITIAL CLIMB

### Findings

3. TERRAIN CONDITION - GRASS

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Occurrence #3: MAIN GEAR COLLAPSED  
Phase of Operation: TAKEOFF - ABORTED

## Factual Information

On October 2, 1997, at 0605 central daylight time, a Beech E18S, N916TM, operated by May Air Express, collided with the terrain during takeoff on runway 31 (2,850' x 75') at the Lake Elmo Airport, Lake Elmo, Minnesota, while on a 14 CFR Part 91 positioning flight. The airplane was substantially damaged. Neither the pilot nor the pilot-rated passenger on board were injured. Visual meteorological conditions prevailed. The airplane was being flown to Minneapolis, Minnesota, to pick up a cargo load when the accident occurred.

The airplane lifted off at 70 knots. He reported he allowed the airplane to accelerate in ground effect for several seconds after which time the airplane became "... unstable in the roll axis." He reported he added power as there was not enough runway left to land on. The airplane was 3/4 the way down the runway when the left wing tip touched the runway. He reported that at this point he added more power at which point the left wing tip contacted the terrain off the left side of the departure end of the runway causing the nose to pitch up. He then reduce the power to idle and the aircraft touched down in the grass collapsing the landing gear.

The pilot stated that the airplane normally lifts off between 70 and 75 knots when it is light. In addition, he stated that the engines sounded normal during the accident sequence.

An inspector from the Minneapolis, Minnesota, FAA Flight Standards District Office reported that another Beech 18 had taken off on the same runway, but in the opposite direction of N916TM less than one minute prior to the accident.

## Pilot Information

<b>Certificate:</b>	Airline Transport	<b>Age:</b>	29, Male
<b>Airplane Rating(s):</b>	Multi-engine Land; Single-engine Land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	Helicopter	<b>Restraint Used:</b>	Seatbelt
<b>Instrument Rating(s):</b>	Airplane; Helicopter	<b>Second Pilot Present:</b>	Yes
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Unknown Unknown	<b>Last FAA Medical Exam:</b>	
<b>Occupational Pilot:</b>		<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	4450 hours (Total, all aircraft), 350 hours (Total, this make and model), 3800 hours (Pilot In Command, all aircraft), 200 hours (Last 90 days, all aircraft), 50 hours (Last 30 days, all aircraft), 3 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

Aircraft Make:	Beech	Registration:	N916TM
Model/Series:	E18S E18S	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	BA337
Landing Gear Type:	Retractable - Tailwheel	Seats:	2
Date/Type of Last Inspection:	Unknown	Certified Max Gross Wt.:	10100 lbs
Time Since Last Inspection:	20 Hours	Engines:	2 Reciprocating
Airframe Total Time:	10530 Hours	Engine Manufacturer:	P&W
ELT:	Installed, activated, did not aid in locating accident	Engine Model/Series:	R-985
Registered Owner:	SCOTT R. MICHAELS	Rated Power:	450 hp
Operator:	MAY AIR XPRESS	Operating Certificate(s) Held:	On-demand Air Taxi (135)

## Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Night/Dark
Observation Facility, Elevation:	STP, 705 ft msl	Distance from Accident Site:	11 Nautical Miles
Observation Time:	0553 CDT	Direction from Accident Site:	245°
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:	140°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29 inches Hg	Temperature/Dew Point:	12°C / 11°C
Precipitation and Obscuration:			
Departure Point:	(21D)	Type of Flight Plan Filed:	None
Destination:	MINNEAPOLIS, MN (MSP)	Type of Clearance:	None
Departure Time:	0605 CDT	Type of Airspace:	Class E

## Airport Information

Airport:	LAKE ELMO (21D)	Runway Surface Type:	Macadam
Airport Elevation:	932 ft	Runway Surface Condition:	Dry
Runway Used:	31	IFR Approach:	None
Runway Length/Width:	3250 ft / 75 ft	VFR Approach/Landing:	None

## Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:	1 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 None	Latitude, Longitude:	

## Administrative Information

Investigator In Charge (IIC):	PAMELA S SULLIVAN	Report Date:	04/24/1998
Additional Participating Persons:	DARROLD BORROWMAN; MINNEAPOLIS, MN		
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 <a href="mailto:pubinq@ntsb.gov">pubinq@ntsb.gov</a> , or at 800-877-6799. Dockets released after this date are available at <a href="http://dms.nts.gov/pubdms/">http://dms.nts.gov/pubdms/</a> .		

The National Transportation Safety Board (NTSB), established in 1967, is an independent federal agency mandated by Congress through the Independent Safety Board Act of 1974 to investigate transportation accidents, determine the probable causes of the accidents, issue safety recommendations, study transportation safety issues, and evaluate the safety effectiveness of government agencies involved in transportation. The NTSB makes public its actions and decisions through accident reports, safety studies, special investigation reports, safety recommendations, and statistical reviews.

The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).