



Aviation Investigation Final Report

Location:	Sandown, New Hampshire	Accident Number:	MIA08CA193
Date & Time:	September 12, 2008, 07:30 Local	Registration:	N151TS
Aircraft:	Cameron Balloons Z-150	Aircraft Damage:	Minor
Defining Event:	Hard landing	Injuries:	2 Serious, 5 None
Flight Conducted Under:	Part 91: General aviation - Other work use		

Analysis

According to the balloon pilot, he had checked several weather sources and sent up several helium balloons to check local winds. The flight path and speed of the test balloons confirmed the weather forecasts obtained earlier, and he saw no significant winds either on the ground or aloft. Early in the flight, the pilot noticed that the winds aloft had increased significantly. He descended to assess how close to the ground the increased winds were, so that he could start to plan for a landing. As the balloon came close to treetop level, he experienced increased wind speeds, and decided to land as soon as possible. The pilot prepared the passengers for a fast, hard, drag landing. As he approached the landing site, he allowed the balloon basket to drag through the top of trees in an effort to reduce speed. The pilot estimated that they decreased their horizontal balloon speed by 50 percent. Once clear of the trees, and over the landing site, he vented the balloon to facilitate a fast descent into the field. He informed the passengers that they would have a very hard landing and warned them to get ready for impact. Two passengers had squatted in the balloon to avoid contact with the treetops, and never returned to the correct landing position, as previously instructed by the pilot. Those passengers sustained serious injuries during the hard landing. The reported wind at a nearby airport, about 30 minutes prior to the accident, was from 190 degrees at 5 knots. Examination of the balloon revealed minor damage to the basket and no preimpact structural or mechanical failures.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's encounter with high winds during approach. Contributing to the severity of injuries was the passengers' improper landing preparation.

Findings

Environmental issues

High wind - Effect on operation

Factual Information

History of Flight

Approach	Other weather encounter
Landing	Hard landing (Defining event)

According to the balloon pilot, he had checked several weather sources and sent up several helium balloons to check local winds. The flight path and speed of the test balloons confirmed the weather forecasts obtained earlier, and he saw no significant winds either on the ground or aloft. Early in the flight, the pilot noticed that the winds aloft had increased significantly. He descended to assess how close to the ground the increased winds were, so that he could start to plan for a landing. As the balloon came close to treetop level, he experienced increased wind speeds, and decided to land as soon as possible. The pilot prepared the passengers for a fast, hard, drag landing. As he approached the landing site, he allowed the balloon basket to drag through the top of trees in an effort to reduce speed. The pilot estimated that they decreased their horizontal balloon speed by 50 percent. Once clear of the trees, and over the landing site, he vented the balloon to facilitate a fast descent into the field. He informed the passengers that they would have a very hard landing and to get ready for impact. Two passengers had squatted in the balloon to avoid contact with the treetops, and never returned to the correct landing position, as previously instructed by the pilot. Those passengers sustained serious injuries during the hard landing. The reported wind at a nearby airport, about 30 minutes prior to the accident, was from 190 degrees at 5 knots. Examination of the balloon by the Federal Aviation Administration found minor damage to the balloon's basket, and no preimpact structural or mechanical failures.

Pilot Information

Certificate:	Commercial	Age:	53, Male
Airplane Rating(s):	None	Seat Occupied:	
Other Aircraft Rating(s):	Balloon	Restraint Used:	
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	None None	Last FAA Medical Exam:	June 12, 2003
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	November 12, 2007
Flight Time:	902 hours (Total, all aircraft), 149 hours (Total, this make and model), 902 hours (Pilot In Command, all aircraft), 64 hours (Last 90 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cameron Balloons	Registration:	N151TS
Model/Series:	Z-150	Aircraft Category:	Balloon
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	6485
Landing Gear Type:	None	Seats:	
Date/Type of Last Inspection:	May 11, 2008 100 hour	Certified Max Gross Wt.:	3000 lbs
Time Since Last Inspection:		Engines:	
Airframe Total Time:	148 Hrs at time of accident	Engine Manufacturer:	
ELT:	Not installed	Engine Model/Series:	
Registered Owner:	On file	Rated Power:	
Operator:	On file	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	MHT,266 ft msl	Distance from Accident Site:	10 Nautical Miles
Observation Time:	06:53 Local	Direction from Accident Site:	270°
Lowest Cloud Condition:		Visibility	10 miles
Lowest Ceiling:	Broken / 6500 ft AGL	Visibility (RVR):	
Wind Speed/Gusts:	5 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	190°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.19 inches Hg	Temperature/Dew Point:	13°C / 11°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Salem, NH (None)	Type of Flight Plan Filed:	None
Destination:	Sandown, NH (None)	Type of Clearance:	None
Departure Time:	06:30 Local	Type of Airspace:	

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Minor
Passenger Injuries:	2 Serious, 4 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 Serious, 5 None	Latitude, Longitude:	42.928611,-71.186943(est)

Administrative Information

Investigator In Charge (IIC):	Wilson, Ralph
Additional Participating Persons:	Jim Newton; FAA/FSDO; Portland, ME
Original Publish Date:	January 22, 2009
Last Revision Date:	
Investigation Class:	Class
Note:	This accident report documents the factual circumstances of this accident as described to the NTSB.
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=68937

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, “accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person” (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available [here](#).