



Aviation Investigation Final Report

Location:	LAS VEGAS, New Mexico	Accident Number:	FTW95LA046
Date & Time:	November 6, 1994, 13:30 Local	Registration:	N54693
Aircraft:	RAVEN S100A	Aircraft Damage:	Substantial
Defining Event:		Injuries:	2 Serious, 3 Minor, 1 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

AFTER A 6 HOUR FLIGHT, WITH 1 HOUR OF FUEL REMAINING, THE BALLOON PILOT ELECTED TO LAND. HE LANDED WHERE THE TERRAIN WAS STILL RELATIVELY OPEN, AFTER FLIGHT OVER OTHER AREAS THAT WERE SUITABLE FOR LANDING. THE ON-BOARD GLOBAL POSITIONING SYSTEM (GPS) INDICATED THE GROUND SPEED WAS 32 MPH. THE PILOT SAID HE ENCOUNTERED 'SIGNIFICANT WIND SHEAR' DURING THE LANDING APPROACH, AND HE VENTED THE ENVELOPE 50 FEET ABOVE THE GROUND. THE BALLOON TOUCHED DOWN AND WAS DRAGGED ACROSS THE GROUND. THERMAL ACTIVITY CAUSED THE BALLOON TO ASCEND, BUT BECAUSE MOST OF THE HOT AIR HAD BEEN VENTED, IT DESCENDED BACK TO THE GROUND AND LANDED HARD. THE PILOT SAID THE WIND HAD BEEN FORECAST TO REMAIN RELATIVELY CALM THROUGHOUT THE DAY; HOWEVER, AT THE TIME OF THE ACCIDENT, HE ESTIMATED IT TO BE AT 28 KNOTS WITH GUSTS TO 33 KNOTS. THE ACCIDENT SITE WAS ABOUT 107 MILES NORTHEAST OF THE LAUNCH SITE.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: THE PILOT'S IMPROPER IN-FLIGHT PLANNING/DECISION. A FACTOR RELATED TO THE ACCIDENT WAS: THE HIGH WIND CONDITION.

Findings

Occurrence #1: HARD LANDING

Phase of Operation: LANDING

Findings

1. (C) IN-FLIGHT PLANNING/DECISION - IMPROPER - PILOT IN COMMAND
2. (F) WEATHER CONDITION - HIGH WIND

Factual Information

On November 6, 1994, approximately 1330 mountain standard time, N54693, a Raven S100A, was substantially damaged during a hard landing near Las Vegas, New Mexico. The commercial pilot and two passengers received minor injuries. Two passengers, one of whom was a balloon rated pilot, sustained serious injuries and one passenger was not injured. Visual meteorological conditions prevailed.

The following is based on the pilot's report. After flying for 6 hours with sufficient fuel to remain aloft for another hour, the decision was made to land where the terrain was still relatively open. The on-board Global Positioning System (GPS) indicated the balloon was flying 32 MPH ground speed. As the pilot made his approach for landing he stated that he encountered "significant wind shear" so he vented the envelope 50 feet above the ground. The balloon touched down and was dragged across the ground for 120 yards. He reported that the thermal activity caused the balloon to take off again and ascend to approximately 100 feet above the ground. Because most of the hot air had been vented, it descended back to the ground at an estimated 800 to 900 feet per minute. The balloon landed hard, and was dragged across the ground for an additional 225 yards.

The pilot said the wind had been forecast to remain relatively calm throughout the day. When he departed Albuquerque, the wind was light and variable. At the time of the accident, the pilot estimated the wind to be from 250 degrees at 28 knots with gusts to 33 knots. The accident site was about 23 miles east of Las Vegas, New Mexico, or about 107 miles northeast of the launch site.

A review of the route of flight revealed that the pilot had numerous opportunities to land as the wind velocity increased.

Pilot Information

Certificate:	Commercial	Age:	55, Male
Airplane Rating(s):	None	Seat Occupied:	Unknown
Other Aircraft Rating(s):	Balloon	Restraint Used:	
Instrument Rating(s):	None	Second Pilot Present:	Yes
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	None None	Last FAA Medical Exam:	
Occupational Pilot:	UNK	Last Flight Review or Equivalent:	
Flight Time:	2006 hours (Total, all aircraft), 23 hours (Total, this make and model), 1985 hours (Pilot In Command, all aircraft), 30 hours (Last 90 days, all aircraft), 10 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	RAVEN	Registration:	N54693
Model/Series:	S100A S100A	Aircraft Category:	Balloon
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	EXP-400
Landing Gear Type:		Seats:	0
Date/Type of Last Inspection:	December 14, 1993 Annual	Certified Max Gross Wt.:	1600 lbs
Time Since Last Inspection:	7 Hrs	Engines:	Unknown
Airframe Total Time:	75 Hrs	Engine Manufacturer:	
ELT:	Not installed	Engine Model/Series:	
Registered Owner:	AIRBORNE HEAT, INC.	Rated Power:	
Operator:		Operating Certificate(s) Held:	None
Operator Does Business As:		Operator Designator Code:	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:		Distance from Accident Site:	
Observation Time:		Direction from Accident Site:	
Lowest Cloud Condition:	Clear	Visibility	50 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	28 knots / 33 knots	Turbulence Type Forecast/Actual:	/
Wind Direction:	250°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:		Temperature/Dew Point:	18°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	ALBUQUERQUE , NM (NONE)	Type of Flight Plan Filed:	None
Destination:		Type of Clearance:	None
Departure Time:	07:40 Local	Type of Airspace:	Class G

Airport Information

Airport:		Runway Surface Type:	
Airport Elevation:		Runway Surface Condition:	
Runway Used:	0	IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	Full stop

Wreckage and Impact Information

Crew Injuries:	1 Minor	Aircraft Damage:	Substantial
Passenger Injuries:	2 Serious, 2 Minor, 1 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 Serious, 3 Minor, 1 None	Latitude, Longitude:	35.590244,-105.219566(est)

Administrative Information

Investigator In Charge (IIC):	Scott, Arnold
Additional Participating Persons:	CAMILLA Z KATTELL; ALBUQUERQUE , NM
Original Publish Date:	August 31, 1995
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=19307

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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](#).