Aviation Investigation Final Report

Location:	Questa, New Mexico	**Accident Number:**	DFW08LA088
Date & Time:	March 30, 2008, 08:30 Local	**Registration:**	N72345
Aircraft:	Balloon Works Firefly 9	**Aircraft Damage:**	Destroyed
Defining Event:	Hard landing	**Injuries:**	5 Serious, 1 Minor
Flight Conducted Under:	Part 91: General aviation - Aerial observation		

Analysis

The commercial pilot stated that he and the five passengers departed in his hot air balloon and drifted down a local gorge. The flight was normal until it was time to land. As the pilot descended to a large open grass field (where he has landed many times before), he told the passengers that they should bend their knees. When the balloon was about 20 feet agl, a large gust of wind caused the balloon to descend rapidly with a forward motion until it hit the ground. The impact was hard enough to eject four of the passengers and to break one of the burner can mounts, which caused it to point downward. The balloon then caught fire as it ascended approximately 30 feet high with the pilot and one of the passengers still onboard. The pilot said the he attempted to turn off the pilot light to the burner cans, but to no avail. He told the passenger not to jump, because the balloon was now starting to descend. The balloon then hit the ground again hard, and the pilot and the passenger were ejected. The balloon then bounced a few more times as it traveled north towards rising terrain where it became fully engulfed in flames and was incinerated. The pilot said that before the flight, he obtained weather information from the local airports and also released pilot balloons to determine wind direction. The winds were calm at the beginning of the flight and then "arced" toward the north-northwest while en route; however, he did not know the speed of the wind. Other wise, the weather as clear of clouds and unlimited visibility. The pilot stated that the balloon most likely encountered a roll cloud from the nearby ridge.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The balloon's encounter with a wind gust/downdraft during landing, which resulted in a hard landing.

Findings

Environmental issues	Gusts - Not specified
Environmental issues	Downdraft - Not specified

Factual Information

History of Flight

Enroute-descent	Other weather encounter
Landing	Hard landing (Defining event)

On March 30, 2008, at 0830 mountain daylight time, a Balloon Works Firefly 9 hot air balloon, N72345, was destroyed after it made a hard landing in an open field and caught fire near Questa, New Mexico. The balloon was registered to and operated by the Pueblo Balloon Company, Taos, New Mexico. The certified commercial pilot sustained minor injuries, and the five passengers were seriously injured. No flight plan was filed for the flight that departed from Taos, New Mexico, around 0730. Visual meteorological conditions prevailed for the local sightseeing flight conducted under 14 Code of Federal Regulations Part 91.

In a telephone interview, the pilot stated that he is the owner of Pueblo Balloon Company. Depending on weather conditions, he usually only makes one flight per day, which is in the early morning hours. The pilot said that before the flight, he obtained weather information from the local airports and also released pilot-balloons to determine wind direction. He also said that during the flight, his "chase crew" also released pilot- balloons. The winds were calm at the beginning of the flight and then "arced" toward the north-northwest while en route; however, he did not know the speed of the wind. Other wise, he described the weather as clear of clouds and unlimited visibility.

The pilot stated that he and the five passengers departed from a launch site near the John Dunn Memorial Bridge, in Taos, New Mexico, then flew down the Rio Grande Gorge. The flight was normal and "lackadaisical", until the last few minutes of the flight. As the pilot descended to a large open grass field (where he has landed many times before) located inside the Wild River Park, he told the passengers that he intended to land and that they should bend their knees. The pilot said that when the balloon was about 20 feet above ground level (agl), the "bottom fell out" and it descended rapidly with a forward motion until it hit the ground. The impact was hard enough to eject four of the passengers and to break one of the burner can mounts causing it to point downward. The balloon started to catch fire, as it ascended to approximately 30 feet agl with the pilot and one of the passengers still onboard. The pilot said the he attempted to turn off the pilot light to the burner cans, but to no avail. He told the passenger not to jump, because the balloon was starting to descend. The balloon then hit the ground again hard, and the pilot and the passenger were ejected. The pilot stated that the passenger was ejected through the side of the wicker basket. The balloon then bounced a few more times as it traveled north towards rising terrain where it became fully engulfed in flames and was incinerated. The pilot stated that the balloon most likely encountered a roll cloud from the nearby ridge.

In a written statement, one of the passengers stated that she and the other passengers were concerned about the wind on the day of the accident, because the previous days had been "very windy." She watched the crew set up the balloon prior to departure, as well as release a "test balloon." Everything "looked good." The takeoff was normal, and the pilot flew over the Rio Grand Gorge and dropped into the canyon three or four times. The passenger said it was a normal flight until the landing. She said, "I remember the pilot radioing the [ground] crew that he could not get a west wind, so we would be landing in a field near [Three Rivers Park]...We started to descend and when we got fairly low the pilot said the landing was going to [be] 'hard so hold on tight...I mean really tight...and don't get out of the basket until I tell you it is OK.' The passenger said she remembered looking down at the ground, but could not recall how high they were. However, she did notice how fast the balloon was moving horizontally in relation to the terrain. The next thing she knew the balloon hit the ground with a tremendous amount of force "very, very hard." The basket dragged over the ground then departed with the pilot and a passenger still onboard. She also noted that one of the burner cans was pointed downward. The balloon then traveled less than a mile away and appeared to be on fire as it disappeared from view.

The pilot held a commercial pilot certificate for lighter-than-air, and reported a total of 853 total hours in hot air balloons.

The weather at Taos Municipal Airport (SKX), Taos, New Mexico, about 15 miles south southwest of the accident site, at 0835, was reported as wind from 110 degrees at 4 knots, visibility 10 miles, clear skies, temperature 36 degrees Fahrenheit, dew point 18 degrees Fahrenheit, and a barometric pressure setting of 30.01 inches Mercury.

Pilot Information

Certificate:	Commercial	**Age:**	48,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:**	
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	May 1, 2006
Flight Time:	853 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Balloon Works	**Registration:**	N72345
Model/Series:	Firefly 9	**Aircraft Category:**	Balloon
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	F9-074
Landing Gear Type:	None	**Seats:**	0
Date/Type of Last Inspection:	November 1, 2007 Annual	**Certified Max Gross Wt.:**	
Time Since Last Inspection:		**Engines:**	0
Airframe Total Time:	443 Hrs at time of accident	**Engine Manufacturer:**	
ELT:	Not installed	**Engine Model/Series:**	
Registered Owner:	Pueblo Balloon Company	**Rated Power:**	
Operator:		**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	SKX,7095 ft msl	**Distance from Accident Site:**	15 Nautical Miles
Observation Time:	14:35 Local	**Direction from Accident Site:**	200°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	6 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	220°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.01 inches Hg	**Temperature/Dew Point:**	9°C / -6°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Taos, NM (NONE)	**Type of Flight Plan Filed:**	None
Destination:	Questa, NM	**Type of Clearance:**	None
Departure Time:	07:30 Local	**Type of Airspace:**	

Airport Information

Airport:	None	**Runway Surface Type:**	
Airport Elevation:		**Runway Surface Condition:**	
Runway Used:		**IFR Approach:**	Unknown
Runway Length/Width:		**VFR Approach/Landing:**	Unknown

Wreckage and Impact Information

Crew Injuries:	1 Minor	**Aircraft Damage:**	Destroyed
Passenger Injuries:	5 Serious	**Aircraft Fire:**	On-ground
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	5 Serious, 1 Minor	**Latitude, Longitude:**	36.70639,-105.593055

Administrative Information

Investigator In Charge (IIC):	Yeager, Leah
Additional Participating Persons:	John R Dewitt; FAA/FSDO; Albuquerque, NM
Original Publish Date:	June 30, 2008
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=67741