Aviation Investigation Final Report

Location:	TULSA, Oklahoma	**Accident Number:**	FTW00LA224
Date & Time:	August 6, 2000, 08:00 Local	**Registration:**	N9091R
Aircraft:	Balloon Works FIREFLY 8	**Aircraft Damage:**	Minor
Defining Event:		**Injuries:**	1 Serious, 4 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot briefed the passengers to expect a rough landing due to surface winds of to 8-10 knots. During the approach, the pilot intentionally 'touched the top of trees with the basket to slow the descent.' The pilot reported that during the descent he briefed the passengers three times to bend their knees, face forward, and hold on. The balloon initially contacted the ground hard and bounced back into the air. During the second ground impact, a passenger was ejected from the basket, and subsequently, the balloon basket 'rolled over him.' The passenger reported that 'he felt pain the first time the basket hit [and] let go.'

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The passenger's failure to comply with the briefing administered by the pilot. Factors were the passenger's physical impairment due to an injury sustained during the initial ground impact and the high wind condition.

Findings

Occurrence #1: HARD LANDING
Phase of Operation: LANDING - FLARE/TOUCHDOWN

Findings
1. (C) PASSENGER BRIEFING - NOT COMPLIED WITH - PASSENGER

2. (F) PHYSICAL IMPAIRMENT - PASSENGER
3. (F) WEATHER CONDITION - HIGH WIND

Factual Information

On August 6, 2000, at 0800 central daylight time, a Balloon Works Firefly 8, hot-air balloon, N9091R, sustained minor damage during a hard landing in a field near Catoosa, Oklahoma. The private pilot and his three passengers were not injured, and one passenger sustained a serious injury. The balloon was registered to and operated by the Reno Vet Center Inc., Reno, Nevada. Visual meteorological conditions prevailed for the 14 Code of Federal Regulations Part 91 personal flight, and a flight plan was not filed. The local flight originated in a staging area near Tulsa, Oklahoma at 0715.

According to the pilot and passengers, the pilot briefed the passengers to expect a rough landing due to surface winds of 8-10 knots. During the approach, the pilot intentionally "touched the top of the trees with the basket to slow the descent." The pilot reported that "the flame went out and then was relit by a passenger" as he touched the top of the trees with the basket. He then briefed the passengers "for the third time to bend knees, face forward, and hold on." The balloon initially contacted the ground hard and bounced back into the air. During the second ground impact, a passenger was ejected from the basket, and subsequently, the balloon's basket "rolled over him." The passenger who was ejected reported that "he felt pain the first time the basket hit [and] let go." The passengers added that during the pre-landing briefing the pilot stated that "they could have a rough landing," and that "the pilot did a good job landing."

The Balloon Works Firefly 8 Flight Manual, section 5, paragraph 5.1, states that the "maximum demonstrated wind speed at landing during certification tests was 7 knots." In the enclosed Pilot/Operator Aircraft Accident Report (NTSB Form 6120.1/2), under the section titled Recommendations, the pilot stated "passenger could have held on more tightly. In future will only fly if [the] surface winds forecast at 7 mph or less."

FAA inspectors, who examined the balloon, reported that the envelope sustained a tear 2-3 feet in length.

Pilot Information

Certificate:	Private	**Age:**	52,Male
Airplane Rating(s):	None	**Seat Occupied:**	Unknown
Other Aircraft Rating(s):	Balloon	**Restraint Used:**	
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Unknown Unknown	**Last FAA Medical Exam:**	
Occupational Pilot:	UNK	**Last Flight Review or Equivalent:**	
Flight Time:	207 hours (Total, all aircraft), 29 hours (Total, this make and model), 207 hours (Pilot In Command, all aircraft), 22 hours (Last 90 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Balloon Works	**Registration:**	N9091R
Model/Series:	FIREFLY 8 FIREFLY 8	**Aircraft Category:**	Balloon
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	F8-353
Landing Gear Type:		**Seats:**	0
Date/Type of Last Inspection:	July 11, 2000 Annual	**Certified Max Gross Wt.:**	2500 lbs
Time Since Last Inspection:	23 Hrs	**Engines:**	Unknown
Airframe Total Time:	310 Hrs	**Engine Manufacturer:**	
ELT:		**Engine Model/Series:**	
Registered Owner:	RENO VET CENTER	**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**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	10 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	180°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:		**Temperature/Dew Point:**	27°C
Precipitation and Obscuration:			
Departure Point:	, OK (NONE)	**Type of Flight Plan Filed:**	None
Destination:	CATOOSA , OK (NONE)	**Type of Clearance:**	
Departure Time:	07:15 Local	**Type of Airspace:**	Class G

Airport Information

Airport:		**Runway Surface Type:**	
Airport Elevation:		**Runway Surface Condition:**	
Runway Used:	0	**IFR Approach:**	
Runway Length/Width:		**VFR Approach/Landing:**	Full stop

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Minor
Passenger Injuries:	1 Serious, 3 None	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Serious, 4 None	**Latitude, Longitude:**	

Administrative Information

Investigator In Charge (IIC):	Ragogna, Jason
Additional Participating Persons:	ROBERT E GIGUERE; OKLAHOMA CITY , OK
Original Publish Date:	July 17, 2001
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=49931

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