Aviation Investigation Final Report

Location:	AKRON, Pennsylvania	**Accident Number:**	NYC97LA176
Date & Time:	August 31, 1997, 19:30 Local	**Registration:**	N834TC
Aircraft:	Thunder and Colt AX-10	**Aircraft Damage:**	None
Defining Event:		**Injuries:**	1 Serious, 9 None
Flight Conducted Under:	Part 91: General aviation		

Analysis

Before landing, the balloon pilot briefed the passengers to hold onto ropes on the side of the basket and to duck down when told. The pilot performed a steep approach, and the balloon touched down hard. The balloon bounced and came to rest upright. The pilot continue to deflate the envelope; however, the winds caught the envelope and tipped the basket over. One passenger received a broken arm, when another passenger fell against her. The pilot reported that during the landing, the wind velocity was about 8 knots.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: failure of a passenger to hang onto the ropes, as directed; which allowed another passenger to be struck as the basket tipped over, broking her arm. A related factor was the wind, which was strong enough to tip the basket, while the envelope was deflating.

Findings

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

Findings
1. (F) WEATHER CONDITION - UNFAVORABLE WIND
2. (C) INSTRUCTIONS,WRITTEN/VERBAL - NOT FOLLOWED - PASSENGER

Factual Information

On August 31, 1997, about 1930 eastern daylight time, a Thunder and Colt AX-10, a hot air balloon, N834TC, tipped over upon landing near Akron, Pennsylvania. The certificated commercial pilot and eight passengers were not injured. A ninth passenger received serious injuries. The balloon was not damaged. No flight plan had been filed for the local sight seeing flight. The flight originated from a field near Stroudsburg, Pennsylvania, about 1825, and was conducted under 14 CFR Part 91.

In the NTSB Pilot/Operator Aircraft Accident Report, the pilot stated:

"...I had a smooth standup inflation. I told the passengers to climb in, gave pilot briefing and started my launch. The flight was smooth, I observed a balloon making a smooth stand up landing. I was the 4th of 6 balloons that launched from the field. During the flight, I called for current surface wind, they reported less than 6 [knots] approx. 6:45 PM. After checking winds & looking for signs of slow wind I chose a landing site w/ a tree line. After clearing the trees, I told the passenger[s] to get down for hard landing. I descended into the field, we touched down & then settled in for landing. After balloon was over on side, passenger complain[ed] of pain due to broken arm...."

In a follow-up telephone interview, the pilot reported he had used a PIBAL prior to departure and estimated the winds at 5 to 6 knots. He estimated the winds at 8 knots during landing. After the bounce, the basket was upright and stationary. As the envelope continued to deflate, the wind caught it and tipped the basket over on its side. The total distance of the flight from takeoff to landing was about 4 miles. The passenger briefing included hanging onto the ropes during landing, and ducking down when told.

In a follow-up telephone interview, the injured passenger reported the balloon touched down hard, bounced and then stopped. She was hanging onto the rope when the basket tipped over and another passenger fell onto her. She was not able to identify the passenger who fell upon her.

The investigation revealed the pilot was using a 210,000 cubic foot envelope. The basket was rectangular in shape, about 92 inches long, 61 inches wide, and 43 inches high. The pilot station was along one of the long sides, in the middle, and partitioned off from the rest of the passenger compartment. The passenger compartment was split into two sections approximately 46 inches by 61 inches by a divider running between the pilot station, and the opposite side. Ropes were available inside the passenger compartments, on the edges, for passengers to hang onto. There were no restraining devices to prevent a passenger from falling onto another passenger should the basket tip over.

The winds at Lancaster airport, about 5 miles west of the accident site were recorded as from 180 degrees, at 10 knots at 1947. According to personnel familiar with the AX-10, when landing with winds between 5 and 7 knots, with the 210,000 cubic foot envelope, there was a possibility of the basket tipping over. With winds at 8 knots or greater, there was a higher probability of the basket tipping over on landing.

Pilot Information

Certificate:	Commercial	**Age:**	33,Male
Airplane Rating(s):	None	**Seat Occupied:**	Center
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:	No	**Last Flight Review or Equivalent:**	
Flight Time:	700 hours (Total, all aircraft), 100 hours (Total, this make and model), 700 hours (Pilot In Command, all aircraft), 40 hours (Last 90 days, all aircraft), 10 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Thunder and Colt	**Registration:**	N834TC
Model/Series:	AX-10 AX-10	**Aircraft Category:**	Balloon
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	2475VSA
Landing Gear Type:		**Seats:**	0
Date/Type of Last Inspection:	August 21, 1997 Annual	**Certified Max Gross Wt.:**	4200 lbs
Time Since Last Inspection:	9 Hrs	**Engines:**	Unknown
Airframe Total Time:	335 Hrs	**Engine Manufacturer:**	
ELT:	Not installed	**Engine Model/Series:**	
Registered Owner:	LANCASTER BALLOONS 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:	LNS ,403 ft msl	**Distance from Accident Site:**	4 Nautical Miles
Observation Time:	19:47 Local	**Direction from Accident Site:**	245°
Lowest Cloud Condition:	Unknown	**Visibility**	10 miles
Lowest Ceiling:	Broken / 15000 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	10 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	180°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30 inches Hg	**Temperature/Dew Point:**	24°C / 19°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	STROUDSBURG , PA (NONE)	**Type of Flight Plan Filed:**	None
Destination:		**Type of Clearance:**	None
Departure Time:	18:25 Local	**Type of Airspace:**	Class G

Airport Information

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

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	None
Passenger Injuries:	1 Serious, 8 None	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Serious, 9 None	**Latitude, Longitude:**	40.16082,-76.19915(est)

Administrative Information

Investigator In Charge (IIC):	Hancock, Robert
Additional Participating Persons:	RONALD PUNTILLO; HARRISBURG , PA
Original Publish Date:	June 26, 1998
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=39428