



Aviation Investigation Final Report

Location:	PHOENIX, Arizona	Accident Number:	LAX00LA292
Date & Time:	August 11, 2000, 06:25 Local	Registration:	N7244X
Aircraft:	Balloon Works FIREFLY II	Aircraft Damage:	None
Defining Event:		Injuries:	1 Serious, 2 Minor, 8 None
Flight Conducted Under:	Part 91: General aviation		

Analysis

On a for-hire sightseeing flight, the balloon encountered unusual wind conditions and collided with the ground after the envelope partially collapsed. One passenger sustained a fractured ankle in the hard landing. The pilot said that a preflight weather briefing contained no flight precautions for the proposed flight area. The launch site is in a flood control basin near a dam and surrounded by hills. Following launch, the pilot contoured a hill and, as the balloon neared the top, it encountered a wind shear the pilot described as a direction change of 70 degrees with a speed of 10 to 12 knots. The pilot said that on the lee side of the hill, he encountered a downdraft followed immediately by an updraft. The pilot said he believed he encountered a wind rotor. The rapid changes in air mass movement distorted the balloon envelope and resulted in spilling some of the heated air. The balloon then entered a rapid descent the pilot was unable to arrest with three burners going and collided with the ground. The METAR for an airport 4 miles away at the time of the accident was reporting winds from 100 degrees at 8 knots. The pilot did not use pibal or other on sight wind quantification devices prior to launch.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's failure to use pibal or other on site wind determination devices, and his subsequent failure to detect adverse wind conditions prior to launch of the balloon.

Findings

Occurrence #1: IN FLIGHT ENCOUNTER WITH WEATHER

Phase of Operation: CRUISE

Findings

1. TERRAIN CONDITION - MOUNTAINOUS/HILLY
2. WEATHER CONDITION - TURBULENCE, TERRAIN INDUCED
3. WEATHER CONDITION - WINDSHEAR
4. (C) WIND INFORMATION - NOT OBTAINED - PILOT IN COMMAND

Occurrence #2: IN FLIGHT COLLISION WITH TERRAIN/WATER

Phase of Operation: DESCENT - UNCONTROLLED

Findings

5. WEATHER CONDITION - DOWNDRAFT
6. AIRCRAFT PERFORMANCE, CLIMB CAPABILITY - EXCEEDED

Factual Information

On August 11, 2000, at 0625 hours mountain standard time, a Balloon Works Firefly II, N7244X, encountered unusual wind conditions and collided with the ground after the envelope partially collapsed about 4 miles northeast of the Deer Valley Municipal Airport, Phoenix, Arizona. The balloon, operated by Hot Air Expeditions under 14 CFR Part 91, was not damaged. The commercial balloon pilot and 7 passengers were not injured; 1 passenger received serious injuries; and 2 passengers received minor injuries. Visual meteorological conditions prevailed for the local for-hire sightseeing flight that departed from a remote launch site at 0617 and was scheduled for a 1-hour flight with a termination at the launch site.

The pilot stated in his written report that a preflight weather briefing contained no flight precautions for the proposed flight area. The launch site is in a flood control basin near a dam and surrounded by hills. Following launch, the pilot contoured a hill, and as the balloon neared the top, it encountered a wind shear the pilot described as a direction change of 70 degrees with a speed of 10 to 12 knots. The pilot said that on the lee side of the hill, he encountered a downdraft followed immediately by an updraft. The pilot said he believed he encountered a wind rotor. The rapid changes in air mass movement distorted the balloon envelope and resulted in spilling some of the heated air. The balloon then entered a rapid descent the pilot was unable to arrest with three burners going and collided with the ground.

The METAR for the Deer Valley Airport at the time of the accident was reporting winds from 100 degrees at 8 knots. The pilot did not report using pibal or other wind quantification devices prior to launch.

Pilot Information

Certificate:	Commercial	Age:	62, Male
Airplane Rating(s):	Single-engine land	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:	None None	Last FAA Medical Exam:	
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	
Flight Time:	3415 hours (Total, all aircraft), 375 hours (Total, this make and model), 85 hours (Last 90 days, all aircraft), 25 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Balloon Works	Registration:	N7244X
Model/Series:	FIREFLY II FIREFLY II	Aircraft Category:	Balloon
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	11008-3-S
Landing Gear Type:		Seats:	0
Date/Type of Last Inspection:	July 14, 2000 Annual	Certified Max Gross Wt.:	3940 lbs
Time Since Last Inspection:	27 Hrs	Engines:	Unknown
Airframe Total Time:	199 Hrs	Engine Manufacturer:	
ELT:	Not installed	Engine Model/Series:	
Registered Owner:	MARS LEASING CO, INC	Rated Power:	
Operator:	HOT AIR EXPEDITIONS	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:	DVT ,1476 ft msl	Distance from Accident Site:	4 Nautical Miles
Observation Time:	06:53 Local	Direction from Accident Site:	150°
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	8 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	100°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29 inches Hg	Temperature/Dew Point:	93°C / 64°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:		Type of Flight Plan Filed:	None
Destination:		Type of Clearance:	None
Departure Time:	06:17 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:	None

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	None
Passenger Injuries:	1 Serious, 2 Minor, 7 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Serious, 2 Minor, 8 None	Latitude, Longitude:	33.679622,-112.089698(est)

Administrative Information

Investigator In Charge (IIC):	Rich, Jeff
Additional Participating Persons:	CHRIS CLARK; SCOTTSDALE , AZ
Original Publish Date:	September 26, 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=49956

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](#).