



Aviation Investigation Final Report

Location:	Avra Valley, Arizona	Accident Number:	WPR12LA138
Date & Time:	March 16, 2012, 08:00 Local	Registration:	N57194
Aircraft:	RAVEN INDUSTRIES INC S-66A	Aircraft Damage:	Substantial
Defining Event:	Collision during takeoff/land	Injuries:	3 Minor, 6 None
Flight Conducted Under:	Part 91: General aviation - Other work use		

Analysis

The pilot reported that the balloon was traveling 5 to 7 knots west toward a road oriented north-south with a power line running along the east side of the road. Beyond the power line and road was a large area of open desert where the pilot planned to land. When the balloon was about 100 yards from the lines at an altitude of about 300 feet above ground level, the pilot began setting the balloon up for landing by cracking open the vent-top of the envelope. The pilot operated one of the two burners to compensate for the expected loss of lift from the partly open top; however, the balloon began a slow descent instead of maintaining altitude, and the descent rate seemed to accelerate. In response, the pilot operated both burners and looked up at the top of the balloon, which he found was over a third open instead of the expected 2- to 3-foot crack. Realizing that the balloon's glidepath would now result in the basket impacting the upper wire of the power line, the pilot decided to fully open the top of the balloon and land short of the power line. The balloon descended and impacted the power line wires with the basket suspension cables contacting more than one wire, which resulted in electrical arcing. The envelope folded over the wires, and the basket came to rest on the ground. The pilot stated that the accident could have been prevented by initiating the set-up for landing only after crossing the last obstacle before the landing area.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's improper decision to partially open the balloon's vent before clearing a power line while landing, which resulted in the balloon descending too soon and contacting the power line.

Findings

Aircraft	Descent/approach/glide path - Not attained/maintained
Personnel issues	Decision making/judgment - Pilot
Environmental issues	Wire - Not specified

Factual Information

History of Flight

Approach-VFR pattern final

Collision during takeoff/land (Defining event)

On March 16, 2012, about 0800 mountain standard time, a Raven Industries, Inc., S-66A balloon, N57194, was substantially damaged when its envelope contacted electrical transmission lines during landing near Avra Valley, Arizona. The commercial pilot and two passengers received minor injuries, and the other six passengers were not injured. The balloon was registered to an individual, and doing business as Southern Arizona Balloon Excursions, under the provisions of 14 Code of Federal Regulations Part 91. A flight plan had not been filed for the local area sightseeing flight, which had originated from Marana, Arizona, about 0630. Visual meteorological conditions prevailed at the time of the accident.

The pilot reported that the balloon was traveling west at a speed of 5 to 7 knots towards a road oriented north-south with a power line running along the east side of the road. Beyond the power line and road was a large area of open desert where the pilot planned to land. When the balloon was about 100 yards from the lines at an altitude of about 300 feet above ground level (agl), he began setting the balloon up for landing by “cracking open the vent-top of the envelope to set up a “heavy” condition for landing.” The pilot operated one of the two burners to compensate for the loss of lift from the partly open top; however, the balloon began a slow descent instead of maintaining altitude, and the descent rate seemed to accelerate. In response, the pilot operated both burners and looked up at the top of the balloon, which he found was “over a third open instead of the expected 2-3 foot opening.” Realizing that the balloon’s glide path would now result in the basket impacting the upper wire of the power line, he decided to fully open the top of the balloon and land short of the power line. The balloon descended and impacted the power line wires with the basket suspension cables contacting more than one wire resulting in electrical arcing. Pieces of burning balloon envelope material rained down into the basket. The envelope folded over the wires, and the basket came to rest on the ground. Three suspension cables were separated and several envelope panels were damaged.

In the section of the National Transportation Safety Board Pilot/Operator Aircraft Accident Report titled “Recommendation (How could this accident/incident have been prevented?),” the pilot stated, “when operating LTA [lighter than air] aircraft initiate set-up for landing sequence only after crossing last obstacle prior to landing field/area.”

Pilot Information

Certificate:	Commercial	Age:	62, 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:	Class 3 Without waivers/limitations	Last FAA Medical Exam:	July 7, 2010
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	April 14, 2010
Flight Time:	2280 hours (Total, all aircraft), 10 hours (Last 90 days, all aircraft), 3 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	RAVEN INDUSTRIES INC	Registration:	N57194
Model/Series:	S-66A	Aircraft Category:	Balloon
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	S66A-115
Landing Gear Type:	None	Seats:	
Date/Type of Last Inspection:	September 27, 2011 Annual	Certified Max Gross Wt.:	
Time Since Last Inspection:		Engines:	0
Airframe Total Time:	336 Hrs at time of accident	Engine Manufacturer:	
ELT:	Not installed	Engine Model/Series:	
Registered Owner:	On file	Rated Power:	
Operator:	On file	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	RYN,2417 ft msl	Distance from Accident Site:	20 Nautical Miles
Observation Time:	08:45 Local	Direction from Accident Site:	160°
Lowest Cloud Condition:		Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	5 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	100°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.03 inches Hg	Temperature/Dew Point:	13°C / -10°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Marana, AZ (AVQ)	Type of Flight Plan Filed:	None
Destination:	Avra Valley, AZ	Type of Clearance:	None
Departure Time:	06:45 Local	Type of Airspace:	

Wreckage and Impact Information

Crew Injuries:	1 Minor	Aircraft Damage:	Substantial
Passenger Injuries:	2 Minor, 6 None	Aircraft Fire:	On-ground
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	3 Minor, 6 None	Latitude, Longitude:	32.434841,-111.31562(est)

Administrative Information

Investigator In Charge (IIC):	Struhsaker, James
Additional Participating Persons:	Jim Kerr; Federal Aviation Administration; Scottsdale, AZ
Original Publish Date:	August 29, 2013
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=83146

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