



Aviation Investigation Final Report

Location:	Morrill, Nebraska	Accident Number:	CEN16LA352
Date & Time:	September 4, 2016, 08:30 Local	Registration:	N982ZS
Aircraft:	Cameron Z90	Aircraft Damage:	Substantial
Defining Event:	Fuel exhaustion	Injuries:	3 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The balloon was participating in a festival, and departed from a grass field with the private pilot and two passengers on board. The balloon climbed to 1,100 ft above ground level and drifted west. The pilot reported that, as the balloon approached a set of power lines, the wind diminished and the balloon became stationary. The pilot changed altitude several times in an attempt to find wind velocity and direction that would move the balloon away from the lines; however, as he again engaged the burners and attempted to climb, the burner system ran out of fuel. The balloon descended, and one of the metal carabiners that attached the basket to the envelope struck a power line, resulting in a spark. The pilot pulled the deflation valve and immediately descended the balloon to the ground. A postaccident examination of the balloon showed impact and thermal arcing damage to the carabiner. Two of the envelope panels exhibited thermal damage, and the envelope temperature sensor wire, which runs from the top of the envelope to the instruments in the basket, was burnt in half. The pilot reported there were no mechanical malfunctions or anomalies with the balloon.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

The pilot's improper inflight fuel management, which resulted in fuel exhaustion and an inability to avoid contact with power lines.

Findings

Personnel issues	Aircraft control - Pilot
Personnel issues	Monitoring equip/instruments - Pilot
Environmental issues	Wire - Contributed to outcome

Factual Information

History of Flight

Approach	Fuel exhaustion (Defining event)
Uncontrolled descent	Miscellaneous/other

On September 4, 2016, about 0830 mountain daylight time, a Cameron Z-90 lighter than air balloon with airborne heater, N982ZS, struck a power line and terrain during an uncontrolled descent, two and a half miles northeast of Morrill, Nebraska. The pilot and two passengers on board were not injured and the balloon received substantial damage. The balloon was registered to, and operated by a private individual under the provisions of 14 Code of Federal Regulations Part 91 as a personal flight. Visual meteorological conditions (VMC) prevailed for the flight that was operated without a flight plan. The local flight originated from the Mitchell, Nebraska, about 0726.

The flight was part of a balloon festival that was taking place at the time. The pilot and passengers took off from a field near Mitchell, Nebraska, climbed to 1,100 ft. agl, and drifted west at 4 to 5 knots. The pilot reported that as he came over the power lines the wind speed reduced to calm and the balloon stopped. The pilot changed altitudes several times to find wind velocity and a vector that would move him away from the lines. After several attempts to maneuver away from the lines the pilot engaged the burners to climb to a higher altitude. As he engaged the burners, the pilot said he heard a change in the burners sound. He checked his fuel gauges; the quantity was low, and engaged the burners again, but the balloon began to lose altitude. During the uncontrolled descent, the balloon contacted the power lines causing a spark. The pilot pulled the deflation line to get the basket on the ground. The balloon basket contacted the ground and the envelope draped over the power lines.

An examination of the balloon showed thermal arcing damage to one of the carabineers that attached the basket to the envelope. There was also thermal damage to two panels in the balloon envelope, and the envelope temperature sensor wire that runs from the sensor at the top of the envelope to the instruments in the basket was burnt in half. No other anomalies with the balloon or its systems were found.

At 0853, the weather conditions at Western Nebraska Regional Airport (BFF), Scottsbluff, Nebraska, 18 nautical miles east-southeast of the accident site was clear skies, visibility 10 statute miles, and wind 150 degrees at 6 knots.

Pilot Information

Certificate:	Private	Age:	55, 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	Last FAA Medical Exam:	
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:	96 hours (Total, all aircraft), 96 hours (Total, this make and model), 35 hours (Last 90 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cameron	Registration:	N982ZS
Model/Series:	Z90	Aircraft Category:	Balloon
Year of Manufacture:	2012	Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	6198
Landing Gear Type:	Skid	Seats:	3
Date/Type of Last Inspection:		Certified Max Gross Wt.:	
Time Since Last Inspection:		Engines:	
Airframe Total Time:	403 Hrs at time of accident	Engine Manufacturer:	
ELT:		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:	BFF,3920 ft msl	Distance from Accident Site:	18 Nautical Miles
Observation Time:	08:53 Local	Direction from Accident Site:	115°
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	6 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	150°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29.85 inches Hg	Temperature/Dew Point:	21°C / 16°C
Precipitation and Obscuration:			
Departure Point:	Mitchell, NE	Type of Flight Plan Filed:	None
Destination:	Morrill, NE	Type of Clearance:	None
Departure Time:	07:26 Local	Type of Airspace:	Class G

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:	2 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	3 None	Latitude, Longitude:	42.000278,-103.883056(est)

Administrative Information

Investigator In Charge (IIC):	Bowling, David
Additional Participating Persons:	Richard J Love; Federal Aviation Administration; Lincoln, NE
Original Publish Date:	May 1, 2017
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=93949

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