

Aircraft Type and Registration: Thunder and Colt 180A Hot Air Balloon, G-BSUU

No & Type of Engines: C3 Magnum Toggle triple burner

Year of Manufacture: 1990

Date & Time (UTC): 29 May 1994 at 1920 hrs

Location: Hillcrest Farm, Cameley, Avon

Type of Flight: Public Transport

Persons on Board: Crew - 1 Passengers - 9

Injuries: Crew - None Passengers - 1 Serious
3 Minor

Nature of Damage: None

Commander's Licence: Commercial Pilot's Licence (Balloons)

Commander's Age: 50 years

Commander's Flying Experience: 732 hours (of which 93 were on type)
Last 90 days - 15 hours
Last 28 days - 7 hours

Information Source: Aircraft Accident Report Form submitted by the pilot

History of flight

The balloon, G-BSUU, was participating in the Bath Balloon Fiesta; its basket was of the type described as 'T-partition', with two longer compartments for the passengers and an end compartment for the pilot and fuel tanks. Several balloons were to be launched, from adjacent sites, over a 30 minute period from about 1800 hrs. The various briefings were completed and the weather forecast for the flight, obtained from Bristol at 1645 hrs, was:

Surface wind	Light and variable
Gradient wind	070°/5 kt
Visibility	>20 km
Weather	No significant
Cloud	7 oktas base 3,000 feet
Temperature	+15°C

G-BSUU was launched in light wind conditions, climbed over the city of Bath at a rate of between 200 to 300 ft/min and tracked south west. The flight progressed normally and the balloon was descended and flew gently, at low level over open ground, at a speed of about 3 to 4 kt; other balloons in the area were observed to be carrying out a similar manoeuvre. A 200 ft/min ascent was initiated to pass over some farm buildings; it was then that the balloon encountered, what the pilot described as, severe turbulence which "resembled the effects of entering a thermal". The vertical speed increased, almost instantaneously, to 800 ft/min and the ground speed increased to an estimated 20 to 30 kt. The balloon shook violently with the initial encounter and continued to shake and judder throughout the ascent. The pilot noted that several other balloons appeared to be encountering similar problems and saw that one had landed; this option was not available to him because he was approaching a village at about 20 kt and the balloon's vertical position was changing in a rapid, and somewhat dramatic, manner. At one point the envelope collapsed on one side and a 600 to 800 ft/min descent ensued, despite the immediate application of heat from all three burners.

The balloon, now tracking west, passed over the village and the pilot decided to make an approach to a large grass field about $\frac{3}{4}$ nm ahead; there was a ridge to the north east of the field, about 75 to 100 feet above the level of the landing area. The pilot managed to control the descent at about 200 ft/min. He anticipated some degree of turbulence, being on the lee side of the ridge, however, the downdraft was much more severe than he expected and the rate of descent increased rapidly to an estimated 400 ft/min. He turned on all three burners and they remained on to impact; the parachute vent was activated. The basket hit the ground at an estimated forward speed of 15 to 18 kt and a vertical speed in excess of 200 ft/min. It bounced about 15 to 20 feet into the air prior to settling back onto the ground. The pilot, who was wearing a security harness, ordered the evacuation of those passengers who were able and rendered assistance to those who were not.

Meteorology

An aftercast was obtained from the Meteorological Office at Bracknell; the synoptic situation showed an anticyclone centred west of Ireland with light and variable surface winds over much of England and Wales. The forecast given for the flight was substantially correct; the cloud cover was less than forecast. It was considered that the turbulent conditions experienced were probably due to encountering a dry thermal associated with convection at a higher level.