

ACCIDENT

Aircraft Type and Registration:	Cameron Z-275 balloon, G-CDDC	
No & Type of Engines:	Not applicable	
Year of Manufacture:	2005	
Date & Time (UTC):	15 July 2008 at 0600 hrs	
Location:	2 miles north of Lenham, Kent	
Type of Flight:	Commercial Air Transport (Passenger)	
Persons on Board:	Crew – None	Passengers - 12
Injuries:	Crew – None	Passengers – 1 (serious)
Nature of Damage:	Balloon undamaged	
Commander's Licence:	Commercial Pilot's Licence	
Commander's Age:	47 years	
Commander's Flying Experience:	1,924 hours Last 90 days - 47 hours Last 28 days - 16 hours	
Information Source:	AAIB Field Investigation	

Synopsis

During the landing the balloon was deliberately flown through a hedge in an attempt to slow it down. One of the passengers became dislodged from the correct landing position and broke both her legs in the ensuing landing.

A report on a similar accident involving another balloon, registration G-SNIF, is also published in this bulletin. Two Safety Recommendations which have been made in that report are reproduced.

History of the flight

Early in the morning 12 passengers arrived for a 'Sunrise' balloon flight from Leeds Castle, Kent; for most of them this was their first flight in a balloon. The weather was assessed by the pilot as suitable for the flight. However, the prevailing wind direction would take a flight that launched from Leeds Castle towards the North Downs, an area not considered ideal for landings, and it was decided to drive to a remote launching site and fly back in the general direction of Leeds Castle. The passengers were given a safety brief, which included the landing phase, and were briefed on the correct landing position. They were also told that they could expect three different types of landing: in a slow landing the basket would remain upright; in a slightly faster landing the basket

would lean over then straighten up again; on the third type of landing the basket would lie on its side and be dragged for a short distance.

The passengers entered the basket unaided, except for one lady who required assistance. The launch and subsequent flight were described as normal. After a flight time of approximately one hour, the pilot selected a field to the north of Lenham, which appeared to him to be suitable for landing, and descended the balloon. He was aware that the wind speed had increased, to an estimated 12 kt, so he decided to fly the basket through a hedge in order to slow it down; the pilot regarded this as a recognised ballooning technique. He also briefed the passengers that during the landing they could expect the basket to be dragged along, on its side, with the passengers lying down. The passengers then adopted their briefed landing positions.

The pilot descended the balloon so that the basket drifted into a hedge immediately prior to the field. The impact with the hedge was quite firm, and the pilot subsequently reported that the basket entered the hedge a little lower than he intended. Some of the passengers misinterpreted this impact as the landing and one of the passengers straightened up from her landing position. The basket then landed in a manner that was described by the pilot as 'firm and bumpy but not heavy' and, after being dragged on its side for a short distance, it came to a halt. The pilot vacated the balloon and, using the passenger's cameras, took pictures of the passengers lying in the basket. The pilot then asked the passengers to disembark. The lady who had been helped into the basket prior to the launch complained that her knees hurt and she required further assistance to get out of the basket and, not wanting to make a fuss, was content to sit on a 'cool' box. The pilot believed that she had probably aggravated an old injury and that she would quickly recover, so he continued

packing the canopy and stowing the basket.

When the balloon was packed the passengers boarded the vehicle for the return journey to Leeds Castle. The passenger with the injured legs was carried to the vehicle. On arrival at Leeds Castle she was again placed on the 'cool' box, and given cold drink cans to hold against her legs in an attempt to reduce any swelling. She was later carried to her car and her husband drove her home. The pain in her legs did not subside so her husband took her to the local hospital where she was admitted; it was subsequently determined that she had broken both legs.

Post accident actions

The accident was not reported to the AAIB for 13 days because the operator was initially unaware of the lady's injuries and was then uncertain as to whether injuries that occurred during what they perceived to be a normal landing constituted a reportable occurrence.

The Civil Aviation (Investigation of Air Accidents and Incidents) Regulations 1996 requires the commander of an aircraft involved in an accident to notify the AAIB of the accident by the quickest means available. The definition of a reportable accident includes; '*where a person suffers a fatal or serious injury as a result of being in or upon the aircraft*'. Any injury which requires hospitalisation for more than 48 hours, commencing within seven days from the date of the injury, or which results in, *inter alia*, the fracture of any bone (except simple fractures of fingers, toes or the nose) is defined as a serious injury.

The operator has since reviewed its accident reporting procedures.

CAA Paper 2006/06 - 'Evaluation of Possible Improvements to Current Measures for Protecting Hot Air Balloon Passengers During Landings'

During the period from January 1993 to January 2003, 31 UK hot air balloon landing accidents were reported to the CAA. As a result, the CAA commissioned an independent study into improving the protection offered to hot air balloon passengers during landing. The study considered a variety of landing basket configurations and passenger landing positions, and also looked at the benefits of dense foam seating blocks. The testing involved a combination of physical tests and detailed computer simulations.

This report was summarised in Notice to Balloon AOC holders 1/2007. The notice included several recommendations, one of which related to the use of dense foam seating blocks. The notice stated:

'Dense foam seating blocks can offer benefits, especially if used in conjunction with additional padding to reduce the effect of head impact with the basket structure. Their use is recommended if practicable.'

Conclusion

During a firm landing a passenger was dislodged from the correct landing position and broke both her legs. A study commissioned by the CAA determined that better protection for passenger's legs, during the landing phase,

is afforded by the use of dense foam blocks in baskets, and that additional padding can reduce the effect of impact with the structure of the basket.

A report into a similar accident involving the balloon registered as G-SNIF, reference EW/G2008/08/08, is also published in this bulletin. Two Safety Recommendations are made in that report. They are repeated below, for information.

Safety Recommendation 2009-011

It is recommended that the Civil Aviation Authority, in conjunction with the British Balloon and Airship Club require balloon baskets certified for Public Transport flights, where practicable, to contain dense foam seating blocks and additional padding to reduce the effect of impact with the basket structure.

Safety Recommendation 2009-012

It is recommended that European Aviation Safety Agency require new balloon baskets certified for Public Transport flights, to contain dense foam seating blocks and additional padding to reduce the effect of impact with the basket structure.