HOT AIR BALLOON ACCIDENTS

Jeff Wilks

On Tuesday 26 February 2013 a hot air balloon crashed near the Egyptian city of Luxor on the banks of the River Nile. There were 19 deaths out of 21 passengers – 18 on-site and one in hospital hours later. According to media reports, the balloon is believed to have caught fire as it was coming in to land.

The Egyptian pilot and a British passenger managed to jump out, before the balloon rapidly ascended. Flames spread and ignited a gas canister, which exploded. The balloon then plunged 1,000 feet into a sugar cane field west of Luxor. The tragedy is thought to be the world’s worst ballooning accident.1

Among the dead were tourists from the UK (2), Hong Kong (9), Japan (4), France (2) and Hungary (1), as well as an Egyptian tour guide. The pilot and British passenger who jumped from the balloon survived, though the pilot reportedly suffered burns to 70% of his body.

Balloon trips, usually at sunrise over the Karnak and Luxor temples, as well as the Valley of the Kings, are popular with tourists but concerns have been raised previously about their safety.2 In April 2009, 16 people were injured, including two British women, when a balloon crashed during a tour of Luxor. The balloon was believed to have hit a mobile phone transmission tower near the banks of the Nile. A fortnight earlier, seven tourists were injured in a similar crash. And in late February that year, three hot air balloons carrying 60 tourists crashed on the same day in separate locations. Seven passengers suffered injuries including broken bones.

There were also crashes in 2008 (four Scottish tourists seriously injured) and 2007 (eight French and American tourists and two Egyptians hurt in a crash landing). After the April 2009 crash early morning hot air balloon flights were suspended for six months and all 42 pilots from the eight companies that offered balloon flights received additional training. The ban has been reinstated following the most recent crash and a full investigation ordered by Egypt’s Prime Minister Hisham Qandil.3

Media reports tend to focus on fatalities in hot air balloon accidents (Table 1), especially where tourists are involved.4 Detailed reports about near

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2 A recent history of Egypt hot air balloon crashes http://www.guardian.co.uk/world/2013/feb/26/history-egypt-hot-air-balloon-crashes.
Table 1: Media reports of hot air balloon accidents, especially involving tourists

<table>
<thead>
<tr>
<th>Date</th>
<th>Details</th>
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<tbody>
<tr>
<td>26 February 2013</td>
<td>A hot air balloon flying over Luxor, in southern Egypt, caught fire and plunged 1,000 feet to the ground, crashing into a sugar cane field and killing 18 foreign tourists and a local guide.</td>
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<tr>
<td>23 August 2012</td>
<td>Six people died and 26 were injured when a hot air balloon carrying 32 people, mostly tourists including some children, caught fire and crashed near the Slovenian capital of Ljubljana.</td>
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<tr>
<td>7 January 2012</td>
<td>A hot air balloon struck power lines near Carterton, New Zealand, and exploded, crashing to the ground and killing all 11 people on board.</td>
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<td>14 October 2009</td>
<td>Four Dutch tourists were killed in Guangxi, China, after pilots lost control and their hot air balloon burst into flames and crashed. A fifth Dutch passenger and two Chinese balloon operators were injured in the accident.</td>
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<td>26 August 2001</td>
<td>Six people, including a child, were killed when their hot air balloon touched a power line at Verrens–Arve, in southwestern France.</td>
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<td>17 June 1999</td>
<td>Four passengers were killed when their hot air balloon hit a power line near Ibbenburen, Germany.</td>
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<td>31 January 1996</td>
<td>Five people died in the Bernese Alps, Switzerland, when their hot air balloon crashed into a mountainside at a height of roughly 8,000 feet.</td>
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<td>8 August 1993</td>
<td>Six people were killed when their balloon hit a power line near Aspen, Colorado, tearing off the basket and sending it plunging 100 feet to the ground.</td>
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<tr>
<td>11 December 1990</td>
<td>Four people died near downtown Columbus, Ohio, after their hot air balloon hit a television tower and deflated.</td>
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<tr>
<td>6 October 1990</td>
<td>Four people were killed in a balloon crash at Gaenserndorf, near Vienna.</td>
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<td>13 August 1989</td>
<td>Thirteen people were killed when their hot air balloon collided with another over the Australian outback near the town of Alice Springs. The two balloons were flying at an altitude of 2,000 feet when one plunged to the ground after the collision.</td>
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misses are harder to find. In one of the few available scientific studies, Cowl and his colleagues reviewed data collected from reports and investigations by the Civil Aeronautics Board and the National Transportation Safety Board for individuals involved in United States hot air balloon crashes from 1964 to 1995. In this period there were 495 crashes involving 1533 persons, including 92 fatalities and 384 serious injuries. Pilot error or incapacitation was determined subjectively by crash investigators to contribute to 85.1% of the crashes. Significant predictors of fatalities were collision with the ground and power-line contact. Most crashes occurred during landing attempts or while approaching a landing spot.

A similar and more recent study of hot air ballooning injuries in the United Kingdom between January 1976 and January 2004 identified 98 ballooning accidents, with two fatalities and 61 people seriously injured. The report...
found that the majority of accidents occurred during the approach and landing phases of flights. Ground collisions and crashes with power lines accounted for the majority of accidents. Equipment failure was an uncommon cause of accidents. Fractures and burns were the most common form of injuries sustained.

Hasham and his colleagues concluded that ‘adequately trained and experienced pilots, proper maintenance of equipment and appropriate pre-flight preparation of the passengers for accidental eventualities are of utmost importance to minimise the risk of serious injury’ (pp. 859–60).

In recent issues of this journal the Federation of Tour Operators’ Preferred Codes of Practice have been described in relation to adventure activities and excursions, including the safety of scuba diving excursions and quad bikes. The FTO Code for Hot Air Ballooning provides a very detailed checklist of safety procedures, including the risk areas identified in official reports.

Top of the list is that the hot air balloon supplier must have current and adequate public liability insurance and an appropriate operator’s licence issued by the relevant national authority. Each pilot must hold a valid CAA (or equivalent) pilot’s licence for flying balloons, for which the correct rating must be held, and also hold a valid Medical Certificate or Declaration of Health Certificate. The FTO Code recommends that the pilot must produce evidence of having satisfactorily completed a course of training to a syllabus recognised by the Authority. Further, that the supplier should follow a Flying Training Exercise and Flight Test at recruitment stage. That is, a detailed 16 hour programme of skills testing outlined in the Code, which includes preparation, take off, flying and landing across various scenarios and conditions. The pilot should be responsible for balloon maintenance, including its air-worthiness in line with the manufacturer’s guidelines before each flight, and for ensuring that fire-extinguishing equipment is always present on board.

Interestingly, considerable coverage in the FTO Code is given to the retrieval vehicle, including adequate insurance, maintenance, and driver selection and training. The Code recommends that there must be a documented emergency procedure for all foreseeable accidents, and that all drivers/pilots and appropriate base personnel must be trained and/or have access to a documented emergency procedure covering all foreseeable balloon incidents and accidents. Selection of launch site, landing site and minimum safe altitude are covered in the Code, and there is an emphasis on the safety briefing. Indeed, the FTO Code notes that:

“Ballooning by nature is a potentially dangerous sport; all participants must be made aware of the risks involved and the correct actions to take whilst ballooning. Participants should note that, although very remote, the risk of injury still exists and they should not participate in the sport if they are unhappy with this fact.”

Finally, the Code recommends that members of the Ground Crew should have completed a course of training to a syllabus recognised by the Authority. They should also complete a training exercise that includes all emergency and accident procedures during their recruitment stage.

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In the UK case of *Evans v Kosmar Villa Holidays* the court held that the FTO Preferred Code of Practice handbook is referred to correctly as guidance; it is advisory in character and has no legal force.\(^\text{10}\) Even so, as the benchmark work in the field the FTO guidelines and audit materials provide tour operators with valuable tools to monitor service quality and to protect their business interests. Unlike other areas of adventure travel and tourism where recreational vehicles are involved (such as jet skis\(^\text{11}\), quad bikes, skidoos\(^\text{12}\)) hot air ballooning is a complex undertaking. Reviews of the medical literature show that most accidents occur during the descent and landing phases of flight. The most frequently identified causative factors are wind and weather changes, power lines, pilot error, equipment failure or a combination of these.

Hasham and his colleagues\(^\text{13}\) concluded that ballooning injuries are uncommon but are steadily increasing in number. While many result only in minor injuries, a significant proportion ends up being serious. Strict adherence to specific safety protocols is necessary to reduce the number of accidents, so the FTO Preferred Code of Practice: Hot Air Ballooning can be a very useful tool if suppliers comply with the recommendations.

### Endnote

A month after the Egyptian accident another hot air balloon crashed near the temples of Angkor Wat (Cambodia) seriously injuring nine foreign tourists. According to media reports the balloon was coming in to land when a strong wind pushed it down and into a palm tree.\(^\text{14}\) The injured tourists were from Russia (3), the Ukraine (2), China (2), and the Philippines (2).\(^\text{15}\)

Like the Egyptian situation, the media reported a series of previous balloon incidents and ‘near misses’ in Cambodia, highlighting the fact that a pattern of reasonably foreseeable events exists in relation to hot air balloon excursions. Egypt resumed its hot air balloon services on Monday 22 April.\(^\text{16}\)

As this paper goes to press another hot air balloon has crashed into the sea about 200 km south of Lima (Peru) in rough weather. Five women have been found alive floating in the sea with the remains of the balloon. The pilot and a male tourist passenger were still missing.\(^\text{17}\) Initial reports have criticized the balloon operator for not requiring passengers to wear life vests on the flight over the Pacific, and for not outfitting the balloon with a GPS system so that it could be tracked.

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\(^{10}\) *Evans v Kosmar Villa Holidays* [2007] EWCA 1003.


