



# National Transportation Safety Board

Washington, DC 20594

## Safety Recommendation

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**Date:** April 7, 2014

**In reply refer to:** A-14-011 and -012

The Honorable Michael P. Huerta  
Administrator  
Federal Aviation Administration  
Washington, DC 20591

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The National Transportation Safety Board (NTSB) urges the Federal Aviation Administration (FAA) to take action on the safety recommendations issued in this letter. These recommendations address operational deficiencies in commercial sightseeing (air tour) balloon operations that have resulted in occupant injuries and a fatality.<sup>1</sup> They are derived from the NTSB's investigations of several air tour balloon accidents. As a result of these investigations, the NTSB has issued two safety recommendations addressed to the FAA. Information supporting these recommendations is discussed below.

On April 21, 2013, about 0735 eastern daylight time, a Cameron Balloons US Z-225 balloon, N65625, operated by US Hot Air Balloon Team, collided with trees during an attempted landing in windy conditions and landed hard near a residence in Chester Springs, Pennsylvania. Of the 10 passengers on board, 3 were seriously injured; 6 passengers and the commercial pilot sustained minor injuries, and 1 passenger was not injured. The balloon sustained minor damage.<sup>2</sup> The pilot stated that he obtained a weather briefing before departure and that the wind was 4 to 5 knots when he launched on the accident flight; he stated that he normally would not launch if the wind was 10 knots or greater. The wind speed increased as the pilot was preparing to land.<sup>3</sup> During the hard landing, one of the passengers or the pilot likely inadvertently contacted the burner switch, which caused a propane flash and burned three of the passengers, resulting in serious injuries.<sup>4</sup> When asked why the pilot flames on the burners were still on during the landing, the pilot replied that larger balloons, such as the accident balloon, have three burners and it takes some time to extinguish the pilot flames. The NTSB determined the probable cause

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<sup>1</sup> Title 14 *Code of Federal Regulations* (CFR) 119.1(e)(2), which addresses the applicability of certification requirements for air carriers and commercial operators, acknowledges sightseeing flights conducted in hot air balloons as legitimate commercial operations but does not require compliance with 14 CFR Parts 135 and 121.

<sup>2</sup> More information about this accident, NTSB case number ERA13LA212, is available at <http://www.nts.gov/aviationquery/index.aspx>.

<sup>3</sup> The recorded wind about 20 minutes after the accident was 9 knots, gusting to 14 knots.

<sup>4</sup> The occurrence of serious injuries, as defined in 49 CFR 830.2, in this event classifies it as a reportable accident.

of the accident was “the pilot’s failure to extinguish the burner pilot lights prior to a hard landing in windy conditions.”<sup>5</sup>

The same operator, US Hot Air Balloon Team, was involved in a previous hard landing accident in windy conditions in May 2007, which resulted in serious injuries to 2 of the 11 passengers on board, as well as minor injuries to 2 passengers. In that accident, the pilot departed in a Cameron Balloons A-250 after having received a weather briefing. Passengers later reported that they received no safety briefing before departure and that, due to wind conditions, the basket contacted a vehicle during the liftoff. After about 30 minutes of flight, the pilot attempted to land several times before the final attempt in a field. The balloon basket struck a tree before landing hard and flipping over. Passengers reported that before landing, the pilot instructed them to brace their backs against the basket but that there was not enough room for all passengers to do so. The NTSB determined that the probable cause of this accident was “unfavorable winds and terrain during a precautionary landing.”<sup>6</sup>

Another hard-landing balloon accident with seven passengers occurred in the same region in September 2008, involving a Lindstrand Balloons USA Model 150A operated by Air Ventures Balloon Rides, Inc. During the hard landing, the fuel fitting separated from an after-market fuel cylinder that was not approved for use on any Lindstrand balloon. In addition, contrary to guidance in the balloon flight manual, one of the fuel cylinder valves remained in the open position during the landing, which resulted in a fire and fatal injuries to the pilot, serious injuries to four passengers, and minor injuries to three passengers.<sup>7</sup> One of the passengers later reported overhearing the accident pilot express concern before departure that the wind would take them in an undesired direction; several passengers reported that up until about 10 minutes before departure, they were told that there was a “50/50 chance” they would depart. A few minutes before the landing, the pilot informed the passengers that, due to the wind conditions, the flight was going to be shorter than planned. The NTSB determined that the probable cause of this accident was “the separation of a portion of a fuel fitting during a hard landing resulting in release of fuel and a fire in the balloon’s basket area. Contributing to the accident was the pilot’s failure to follow the manufacturer’s published procedures to shut down the fuel system prior to landing and the operator’s installation of a third fuel tank and the fuel fitting that separated during the hard landing.”<sup>8</sup>

These accidents highlight operational deficiencies in commercial air tour balloon operations, such as operating in unfavorable wind conditions and failure to follow flight manual procedures, that the NTSB is concerned are a result of the current lack of oversight relative to similar airplane and helicopter air tour operations. Title 14 *Code of Federal Regulations* (CFR) 119.1,

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<sup>5</sup> Review of a flight manual for the accident balloon make and model revealed that the normal procedures for approaching to land instructed the pilot to shut off the pilot light connection just before touchdown in high winds. Review of the flight manual emergency procedures for preparation for a hard landing revealed that they instructed the pilot to extinguish the pilot flames by closing the pilot light valves at the burners or by disconnecting the vapor hose quick disconnects at the tanks.

<sup>6</sup> More information about this accident, NTSB case number NYC07LA114, is available at <http://www.nts.gov/aviationquery/index.aspx>

<sup>7</sup> A 2003 service bulletin by the fuel cylinder manufacturer advised that the cylinders be removed from service.

<sup>8</sup> More information about this accident, NTSB case number NYC08FA307, is available at <http://www.nts.gov/aviationquery/index.aspx>

which addresses the applicability of certification requirements for air carriers and commercial operators, exempts airplane, helicopter, and balloon air tour operations from compliance with 14 CFR Parts 135 and 121. However, to conduct commercial operations, airplane and helicopter operators are required by 14 CFR 91.147, “Passenger carrying flights for compensation or hire,” to receive and maintain a letter of authorization (LOA) that outlines operational limitations and provisions from the FAA flight standards district office (FSDO) nearest the operators’ principle place of business.<sup>9</sup> Doing so imposes some level of FAA oversight by creating a record of operators with FSDOs for periodic surveillance checks to verify that flights are being conducted in accordance with the LOAs. Currently, operators conducting air tour balloon flights are fully exempt from this regulation. The NTSB anticipates that if these operators were required to obtain and maintain an LOA, they would be subject to surveillance activities such as checks to verify that appropriately certificated pilots are employed and undergo required competency evaluations, properly certificated and maintained equipment and safety checklists are used, appropriate passenger safety briefings and flight planning are conducted, and Part 91 flight operations procedures are followed. Commercial balloon operators would be motivated to comply with the provisions in their LOAs knowing that an enforcement action, including suspending or revoking an LOA, could result in the loss of business.

Depending on gondola capacity, balloons can carry more than 20 passengers per flight. Given the various safety deficiencies noted in the NTSB’s investigations of the above balloon accidents, the potential for a high number of fatalities in a single air tour balloon accident is of particular concern if air tour balloon operators continue to conduct operations under less stringent regulations and oversight. Although such an accident has yet to occur in the United States, a high-fatality accident occurred in Egypt on February 26, 2013, when a commercial air tour balloon carrying 21 occupants experienced a fire on board, resulting in 19 deaths. Based on the number of recurring accidents in the United States involving similar safety issues, the NTSB believes that air tour balloon operators should be subject to greater regulatory oversight.

The NTSB concludes that passengers who hire air tour balloon operators should have the benefit of a similar level of safety oversight as passengers of air tour airplane and helicopter operations. Although the NTSB continues to support oversight of airplane and helicopter air tours that enforces compliance with Part 135, or equivalent, requirements for all flights (including those within a 25-mile radius of the departure airport), we believe that requiring commercial balloon operators to obtain and maintain an LOA from the FAA would be a beneficial first step for improving safety for these operations. Therefore, the NTSB recommends that the FAA amend 14 CFR 91.147 to require commercial balloon operators to obtain and maintain an LOA to conduct air tour flights. Once commercial air tour balloon operators are required to obtain and maintain an LOA, FSDOs would have a record of all such operations, and, as workload permits, principal inspectors could include these operators in their general

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<sup>9</sup> Section 91.147 was created in response to NTSB Safety Recommendation A-95-58, which asked the FAA to “develop and implement national standards...within 14 CFR Part 135, or equivalent regulations, for all air tour operations with powered airplanes and rotorcraft to bring them under one set of standards with operations specifications and eliminate the [current] exception.” The NTSB classified this recommendation “Closed—Unacceptable Action” on November 21, 2007, noting our disagreement with the final rule’s allowance that air tour flights departing and returning to the same airport and staying within a 25-mile radius of the airport can operate under Part 91.

surveillance activities. Therefore, the NTSB recommends that the FAA, through appropriate revisions to Order 1800.56J, “National Flight Standards Work Program Guidelines,” encourage principal operations inspectors to include in their general surveillance activities commercial balloon operators that hold LOAs, especially upon initial issuance of the LOA and then as necessary, particularly if the operator is involved in an accident.

Therefore, the National Transportation Safety Board makes the following recommendations to the Federal Aviation Administration:

Amend 14 *Code of Federal Regulations* Section 91.147 to require commercial balloon operators to obtain and maintain a letter of authorization to conduct air tour flights. (A-14-011)

Through appropriate revisions to FAA Order 1800.56J, “National Flight Standards Work Program Guidelines,” encourage principal operations inspectors to include in their general surveillance activities commercial balloon operators that hold letters of authorization (LOA), especially upon initial issuance of the LOA and then as necessary, particularly if the operator is involved in an accident. (A-14-012)

Chairman HERSMAN, Vice Chairman HART, and Members SUMWALT, ROSEKIND, and WEENER concurred in these recommendations.

The NTSB is vitally interested in these recommendations because they are designed to prevent accidents and save lives. We would appreciate receiving a response from you within 90 days detailing the actions you have taken or intend to take to implement them. When replying, please refer to the safety recommendations by number. We encourage you to submit your response electronically to [correspondence@ntsb.gov](mailto:correspondence@ntsb.gov).

[Original Signed]

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Chairman