



National Transportation Safety Board

Washington, DC 20594

Urgent Safety Recommendation Report

Additional Harness Systems that Allow for Rapid Egress

Accident Number: ERA18MA099
Operator: Liberty Helicopters
Aircraft: Airbus Helicopters AS350B2, N350LH
Location: Flushing, NY
Date: March 11, 2018
Adopted: March 19, 2018

The National Transportation Safety Board (NTSB) is providing the following information to urge the Federal Aviation Administration (FAA) to take immediate action on this urgent safety recommendation to ensure that, if a harness system is used for an open-door passenger flight, it allows for rapid egress from the aircraft in the event of an emergency. This recommendation is derived from our ongoing investigation of a fatal accident involving an Airbus Helicopters AS350B2 helicopter, N350LH, that impacted the East River during an autorotation after a loss of engine power; the helicopter subsequently rolled inverted. The NTSB is issuing one urgent safety recommendation to the FAA.

Background and Analysis

On March 11, 2018, about 1908 eastern daylight time, an Airbus Helicopters AS350B2 helicopter, N350LH, was substantially damaged when it impacted the East River during an autorotation after a loss of engine power near New York, New York; the helicopter subsequently rolled inverted. The pilot egressed from the helicopter and sustained minor injuries. Five passengers remained inside the helicopter and were fatally injured. The doors-off aerial photography flight was scheduled for 30 minutes and was operated by Liberty Helicopters under the provisions of Title 14 *Code of Federal Regulations (CFR)* Part 91. Visual meteorological conditions prevailed, and no flight plan was filed for the flight, which originated from Helo Kearny Heliport, Kearny, New Jersey, about 1900.

The initial investigation into this accident has revealed that the five passengers onboard the helicopter were provided with airframe manufacturer-installed restraints (lap belt/upper body restraint), as well as a harness system that allowed the passengers to move securely within the helicopter and sit in the door sill while airborne.¹ This harness system was not installed by the helicopter manufacturer; it was comprised of off-the-shelf components (a nylon fall-protection harness tethered via a lanyard to the helicopter) that were provided to the passengers by FlyNYON,

¹ In this report, “restraint” refers to the manufacturer-installed restraint system, and “harness” refers to the additional system provided by the operator to ensure passengers did not fall out of the helicopter while moving around.

the company that sold the experience to the passengers. Under normal circumstances, at the conclusion of each flight, FlyNYON personnel would unscrew a locking carabiner located on the back of the passengers' harnesses so that the passengers could egress.

Despite being given a briefing on how to self-egress from the restraint and harness systems, none of the passengers were able to escape after the helicopter rolled over into the water. The Office of the Chief Medical Examiner, New York, New York, determined that the cause of death of all five passengers was drowning. To self-egress from the harness system, the passengers would have had to either cut the tether with a provided cutting tool or unscrew a locking carabiner located at their back. The pilot, who was wearing only the manufacturer-installed restraint system, was able to release his restraints, escape the helicopter, and survive.

The manufacturer-installed restraint systems were required to comply with 14 *CFR* 27.785(c), which states that “[e]ach occupant’s seat must have a combined safety belt and shoulder harness with a single point release.” According to FAA personnel supporting the investigation, the harness system provided to the passengers was not evaluated by the FAA to determine if it met 14 *CFR* 27.785(c), nor was it required to meet that regulation because the harness was not required equipment.

The NTSB has a long-standing concern with safe egress for helicopter passengers. As a result of the investigation of a helicopter accident that occurred in 2008, the NTSB found that three of the surviving passengers’ unfamiliarity with the type of buckles on the restraints in the helicopter significantly hindered their ability to release their restraints when they attempted to evacuate the cabin under emergency conditions.² The passengers received a briefing that described how to operate the rotary restraint, but the surviving passengers said they became confused with its release when the accident occurred. None were able to release the restraint, and all three had to wiggle out of the lap belt.

Both accidents demonstrate how critical it is that passengers are able to rapidly and easily remove themselves from restraints and harnesses in an emergency. Any harness system should be minimally difficult to operate by a passenger; that is, it should release quickly and be easily released under load, yet it should still protect against an inadvertent release. The NTSB concludes that, in an emergency, any harness systems in an aircraft should allow passengers to quickly extricate themselves from the aircraft without having to cut or forcefully remove the harness. While the investigation into the New York accident is ongoing, the NTSB urgently recommends that the FAA prohibit all open-door commercial passenger-carrying aircraft flights that use passenger harness systems, unless the harness system allows passengers to rapidly release the harness with minimal difficulty and without having to cut or forcefully remove the harness.

² NTSB. 2010. *Crash During Takeoff of Carson Helicopters, Inc., Firefighting Helicopter Under Contract to the U.S. Forest Service, Sikorsky S-61N, N612AZ, Near Weaverville, California, August 5, 2008.* [AAR-10/06](#). Washington, DC: NTSB.

Urgent Recommendation

To the Federal Aviation Administration:

Prohibit all open-door commercial passenger-carrying aircraft flights that use passenger harness systems, unless the harness system allows passengers to rapidly release the harness with minimal difficulty and without having to cut or forcefully remove the harness. (A-18-12)

BY THE NATIONAL TRANSPORTATION SAFETY BOARD

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Adopted: March 19, 2018