



# National Transportation Safety Board

Washington, D.C. 20594  
Safety Recommendation

*Log # 2653A*

**Date:** August 29, 1997

**In reply refer to:** A-97-96

To optometric associations  
(see attached list)

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About 1638 eastern daylight time, on October 19, 1996, a McDonnell Douglas MD-88, N914DL, operated by Delta Air Lines, Inc., as flight 554, struck the approach light structure and the end of the runway deck during the approach to land on runway 13 at the LaGuardia Airport, in Flushing, New York. Flight 554 was being operated under the provisions of 14 Code of Federal Regulations (CFR) Part 121, as a scheduled, domestic passenger flight from Atlanta, Georgia, to Flushing. The flight departed the William B. Hartsfield International Airport at Atlanta, Georgia, about 1441, with two flightcrew members, three flight attendants, and 58 passengers on board. Three passengers reported minor injuries; no injuries were reported by the remaining 60 occupants. The airplane sustained substantial damage to the lower fuselage, wings (including slats and flaps), main landing gear, and both engines. Instrument meteorological conditions prevailed for the approach to runway 13; flight 554 was operating on an instrument flight rules flight plan.

The National Transportation Safety Board determined that the probable cause of this accident was the inability of the captain, because of his use of monovision (MV) contact lenses, to overcome his misperception of the airplane's position relative to the runway during the visual portion of the approach. This misperception occurred because of visual illusions produced by the approach over water in limited light conditions, the absence of visible ground features, the rain and fog, and the irregular spacing of the runway lights.

Contributing to the accident was the lack of instantaneous vertical speed information available to the pilot not flying, and the incomplete guidance available to optometrists, aviation medical examiners (AMEs), and pilots regarding the prescription of unapproved MV contact lenses for use by pilots.<sup>1</sup>

The AME who examined the captain reported that he was unaware that the captain used MV contact lenses; he indicated that it would never have occurred to him that the captain might use MV contact lenses, because the captain's vision did not indicate the need for MV contact lens correction. The Safety Board concludes that AMEs need to know if pilot examinees are

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<sup>1</sup> For more detailed information, read Aircraft Accident Report—"Delta Air Lines Flight 554, McDonnell Douglas MD-88, N914DL, Descent Below Visual Glidepath and Collision with Terrain, LaGuardia Airport, New York, October 19, 1996" (NTSB/AAR/97/03)

using contact lenses, and currently no process is in place to ensure that AMEs are provided with that information.

Additionally, the captain and the optometrist who prescribed the MV contact lenses for the captain were not aware that the use of MV contact lenses by pilots performing flying duties was not approved by the FAA. This is consistent with the information obtained during a Safety Board investigation into the general aviation accident that involved MV contact lens use.<sup>2</sup> The Safety Board concludes that information concerning the possible hazards of MV contact lens use is not well disseminated among optometrists and the pilot population.

Because the information available to optometrists and pilots is insufficient, the Safety Board believes that the optometric associations should issue a briefing bulletin to member optometrists, informing them of the potential hazards of and prohibition against MV contact lens use by pilots while performing flying duties, and urging them to advise pilot-rated patients of those potential hazards (MV contact lens' effect on distance judgments/perceptions).

As a result of the investigation of this accident, the National Transportation Safety Board makes the following recommendation to optometric associations:

Issue a briefing bulletin to member optometrists, informing them of the potential hazards of and prohibition against monovision (MV) contact lens use by pilots while performing flying duties, and urging them to advise pilot-rated patients of those potential hazards (MV contact lens' effect on distance judgments/perceptions). (A-97-96)

Also as a result of this investigation, Safety Recommendations A-97-85 through -95 were issued to the Federal Aviation Administration.

The National Transportation Safety Board is an independent Federal agency with the statutory responsibility "...to promote transportation safety by conducting independent accident investigations and by formulating safety improvement recommendations" (Public Law 93-633). The Safety Board is vitally interested in any actions taken as a result of its safety recommendations and would appreciate a response from you regarding action taken or contemplated with respect to the recommendation in this letter. Please refer to Safety Recommendation A-97-96 in your reply.

Chairman HALL, Vice Chairman FRANCIS, and Members HAMMERSCHMIDT, GOGLIA, and BLACK concurred in this recommendation.

By:

  
Jim Hall  
Chairman

<sup>2</sup> For additional information on the general aviation accident, see the Safety Board's report, CHI96LA089.

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